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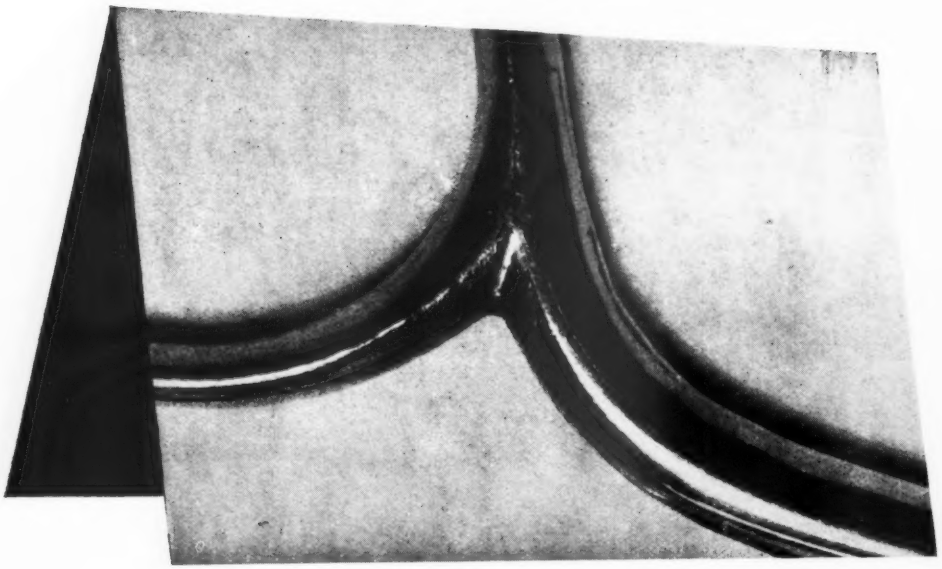

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has an impressive 'tale'

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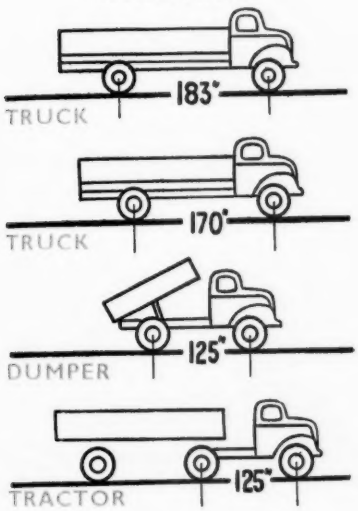

The Leyland COMET " 90 " is a powerful multi-purpose cruiser-weight diesel truck that has no counterpart in this country. Made in three wheelbases, with gross ratings ranging from 21,000 lb. to 40,000 lb., it is available as a fast haulage vehicle, a tipper or for articulated outfits. The COMET " 90 " is light to handle, safer than most (with a braking area of 480 sq. in.) and has an unusually generous margin of performance. The high efficiency 6-cylinder 90 h.p. Leyland diesel, plus the two-speed Eaton axle, produces that extra acceleration for high-speed door-to-door journeys. Fuel economy has always been an outstanding Leyland feature, and the proved performance of the COMET " 90 " has shown low operational figures that are unsurpassed. All models are made for either right- or left-hand control. Write for particulars of the full range of these fine utility vehicles.

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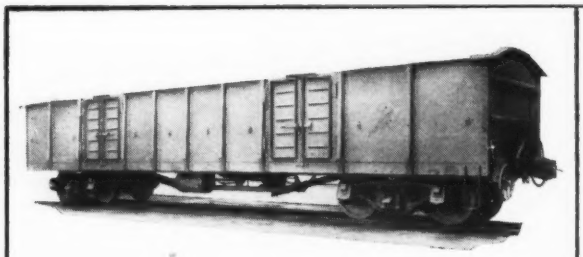

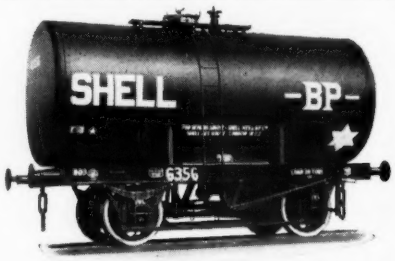

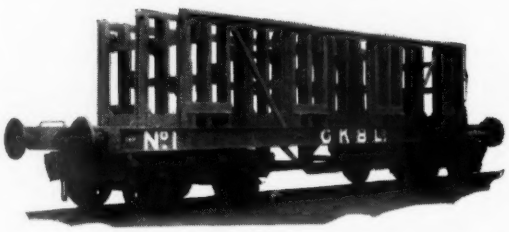

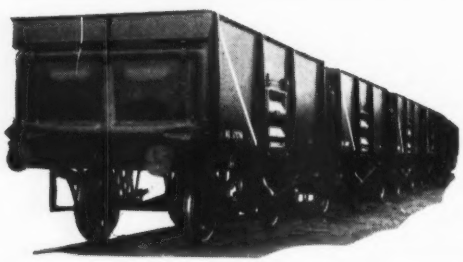

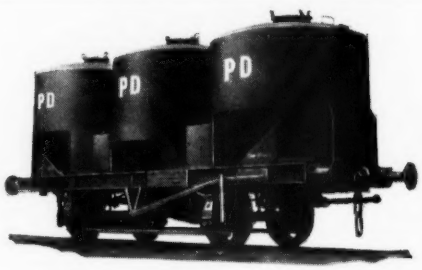

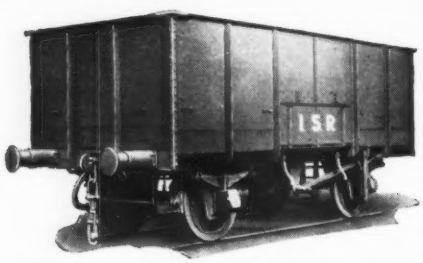

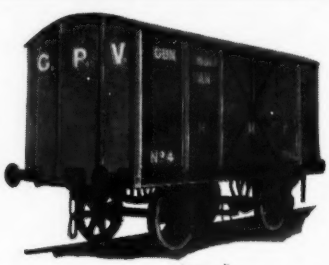

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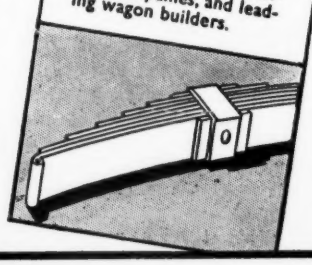

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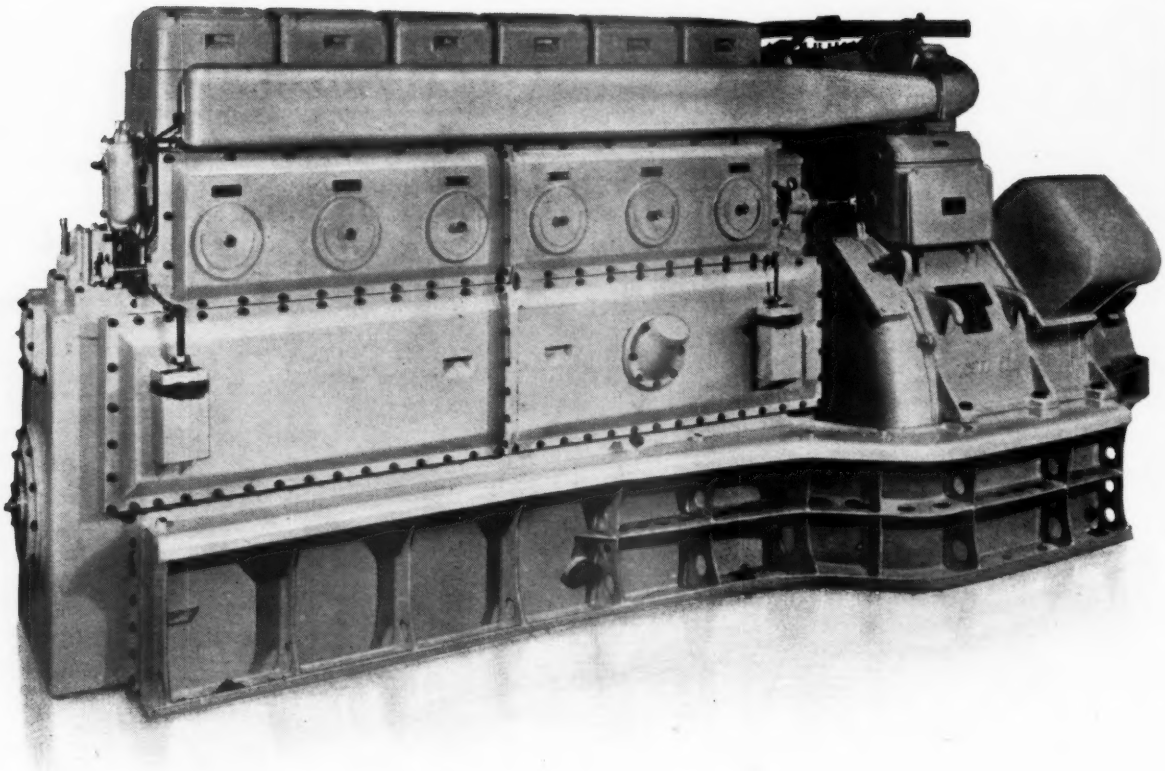

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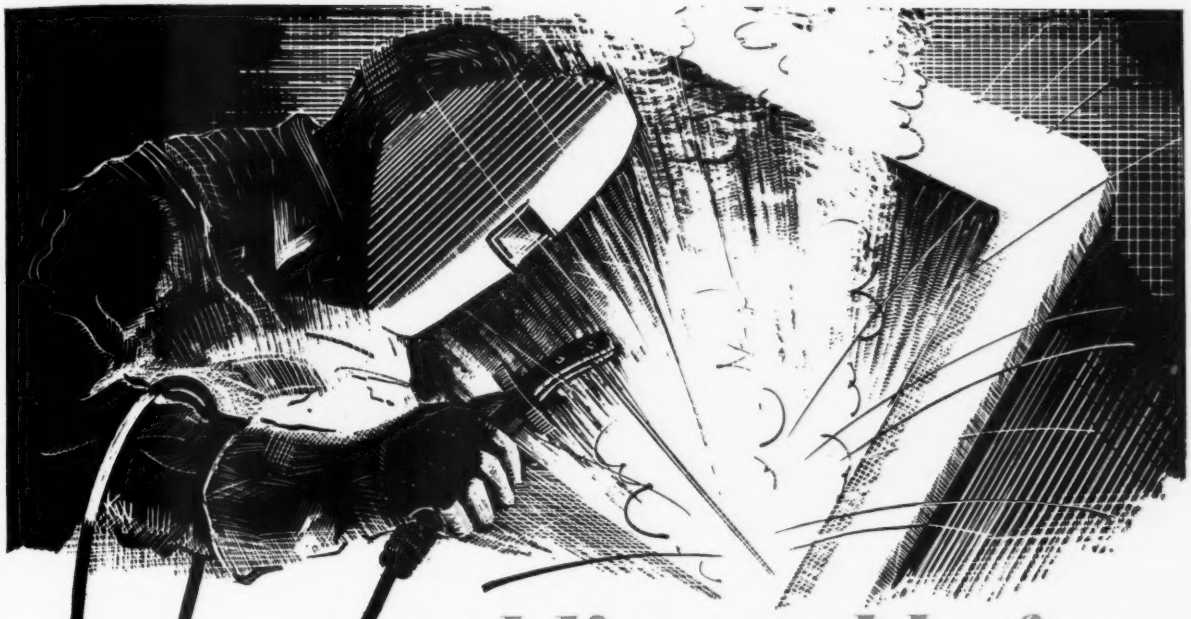

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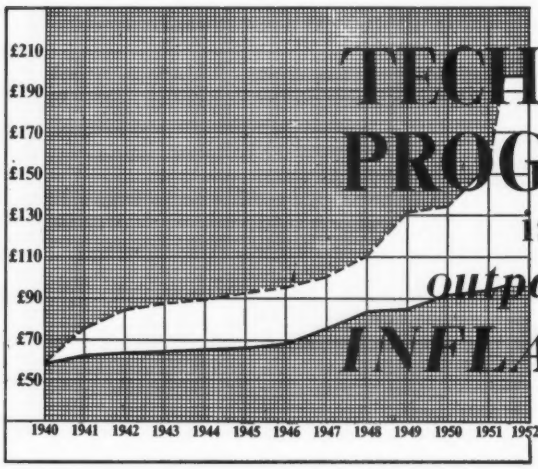

TECHNICAL PROGRESS is outpacing INFLATION in the STEEL FOUNDRY INDUSTRY

Back in 1949 *the British Steel Founding Industry made history and hit the headlines in the newspaper simultaneously when it became the first British industry to send a Productivity Team to the U.S.A. to study American production methods under the auspices of the Anglo-American Council on Productivity. In its role of guinea pig, in what was then a new experiment in Anglo-American co-operation, the Productivity Team from the Steel Founding Industry distinguished itself in no uncertain manner. The industry did likewise. In less than two months after the publication of the Team's now famous report the British Steel Founders' Association (BSFA) had organised a Productivity Convention at which the recommendations contained in the report formed the basis of discussion. At that convention, besides discussing how these recommendations might be implemented, the delegates voted unanimously upon the motion to form a B.S.F.A. Productivity Committee under the chairmanship of Mr. Frank Martin, O.B.E., the Team's leader. Less than six months later, another Convention was held to report progress. The steel founders were not paying lip service alone to the idea of increasing productivity, they were, and still are, taking the most forceful action to bring it about.*

* * *

The Steel Founding Industry's reactions to the idea of Anglo-American co-operation in the job of increasing productivity in this country were in conformity with its attitude to other problems of the day. A progressive spirit has prevailed in the industry for a number of years, and it was crystallised and given purposeful direction when the B.S.F.A. was formed in 1944.

Since then, the Industry's resources in skill, experience and intellect have been directed towards every form of activity calculated to increase the efficiency of the industry and to improve the quality and properties of its products—steel castings. At the same time, due regard is paid to the interests and welfare of those employed in the industry.

Here then is a relatively small industry striving through its trade association to measure up to its mid-twentieth century responsibilities—and with what results?

There are no results so good that they cannot be bettered, and the steel founder is far from satisfied; but with the co-operation of its customers the industry is producing steel castings of a standard of quality much higher than ever before, at a basic price which, since 1939, has risen ***by a modest amount only. In 1939 the average selling price per ton of steel castings was £57 10s.;*** *at the end of April* 1951 *the average price per ton had risen to* £95 6s. *If this increase is compared with the Board of Trade index showing the average increase in the cost of industrial materials and manufactures, i.e. an article costing* £57 10s. *at the end of* 1939 *had risen by* 30*th April* 1951*—according to the index —to* £198 10s.* ***it becomes apparent that the Steel Founders can be numbered among the select few industries who are outpacing inflation as a result of increased administrative efficiency and technical progress.***

**The figures are quoted up to and inclusive of* 30*th April* 1951 *because that is the last date upon which the Board of Trade index showing the average cost of industrial materials and manufactures is available. Since* 30*th April there has been an increase of* 5% *in the prices of steel castings, but since there is a general upward movement of prices taking place, the comparison remains approximately the same.*

The Anglo-American Productivity Team from the Steel Foundry Industry blazed a trail and set up standards for team composition and report-writing of which the Industry is immensely proud. This Team, which the photograph shows about to begin the first stage of its journey, was truly representative of the Industry; men from the shop floor, administrative staff and representatives of management, travelled, lived and worked as a team in every sense of the word. Of the reactions of the press to their report, this cutting from a well-known national newspaper is typical.


All Ranks in Steel Founding Industry Get Together on Productivity Proposals

Within two months of publication of the report, the B.S.F.A. held a Productivity convention and, as this cutting from a technical journal records, those who attended the convention, similarly to those who made up the Productivity Team, came from all ranks and joined in discussions which were frank and remarkably constructive, as results have since shown. At this convention, a number of papers were read by members of the Team.

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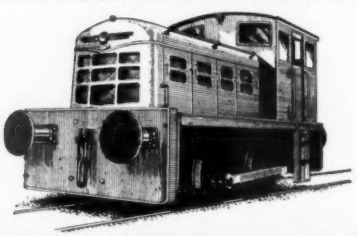

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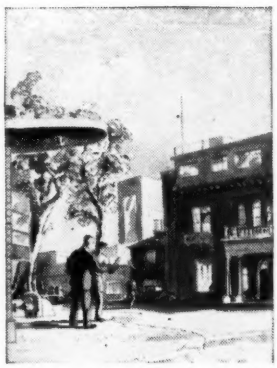

David Cobb, R.O.I., made this drawing for the Williams and Williams series 'Window Makers at Work.'

When you enter the gates of the great Reliance Works
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Around it now rises a million pound plant that makes
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this factory has turned out Jerricans and Frigates, Bailey bridges
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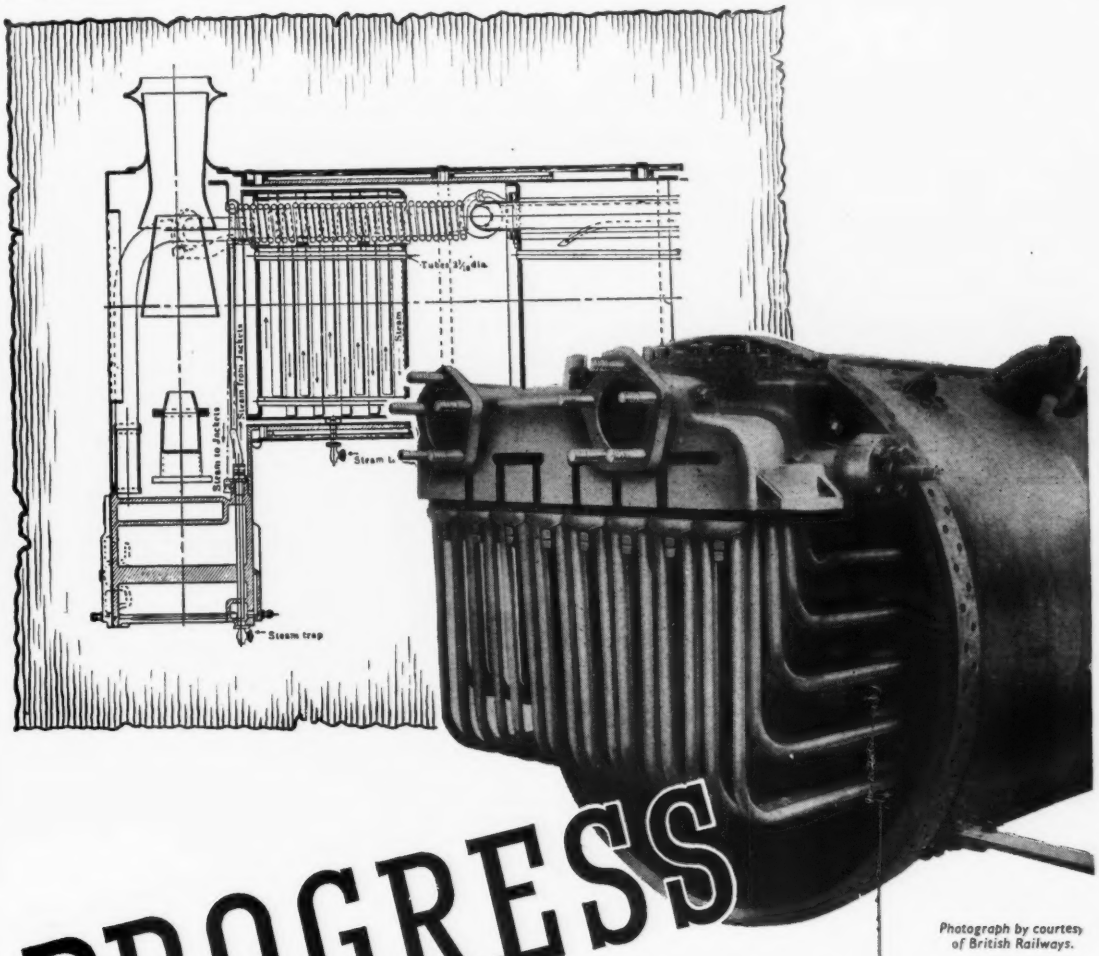

PROGRESS

Photograph by courtesy of British Railways.

The Smoke-box type Superheater of 1898 designed by Sir John Aspinall, introduced the modern era of steam locomotive superheating in this country, and represented the most advanced design of its time.

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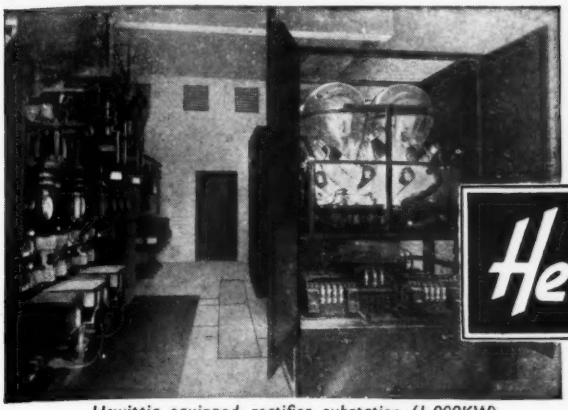
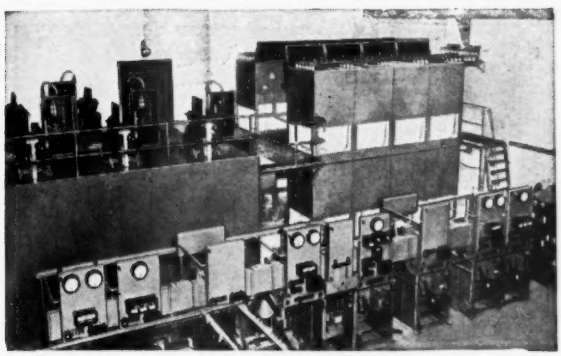
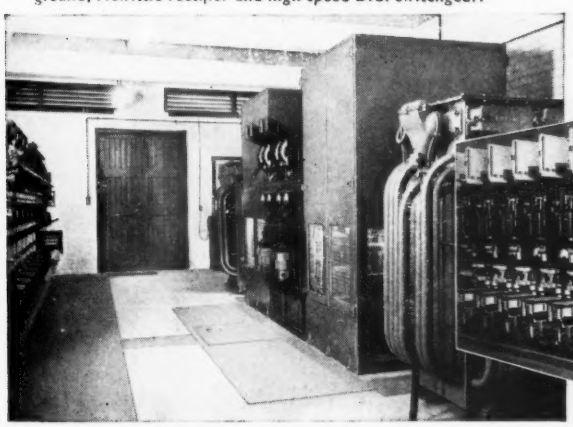


Hewittic equipped rectifier substation (1,000KW). supplying Reading Corporation Trolley-Buses.

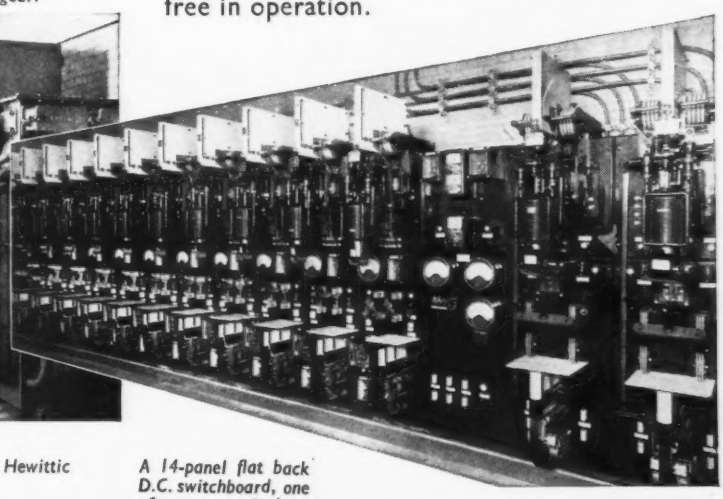


A substation on the Midland Region System, British Railways, showing in the foreground, H.V. switchgear and, in the background, Hewittic rectifier and high speed D.C. switchgear.

HACKBRIDGE and Hewittic Electric Co. Ltd. has been responsible for the supply of complete equipment for a very large number of traction rectifier substations including, in each case, not only the Hewittic rectifier—simplest, most reliable of all converting plant—but also the whole of the H.V. and L.V. switchgear. The Company will gladly offer its advice and quotation for complete equipment, with the assurance—from long experience—of a thoroughly satisfactory installation, modern in layout and efficient and trouble-free in operation.



A typical substation, comprising 1,800 ampere Hewittic rectifier with associated switchgear.



A 14-panel flat back D.C. switchboard, one of many supplied to the London Transport Executive for feeding trolley-buses at 600 volts.

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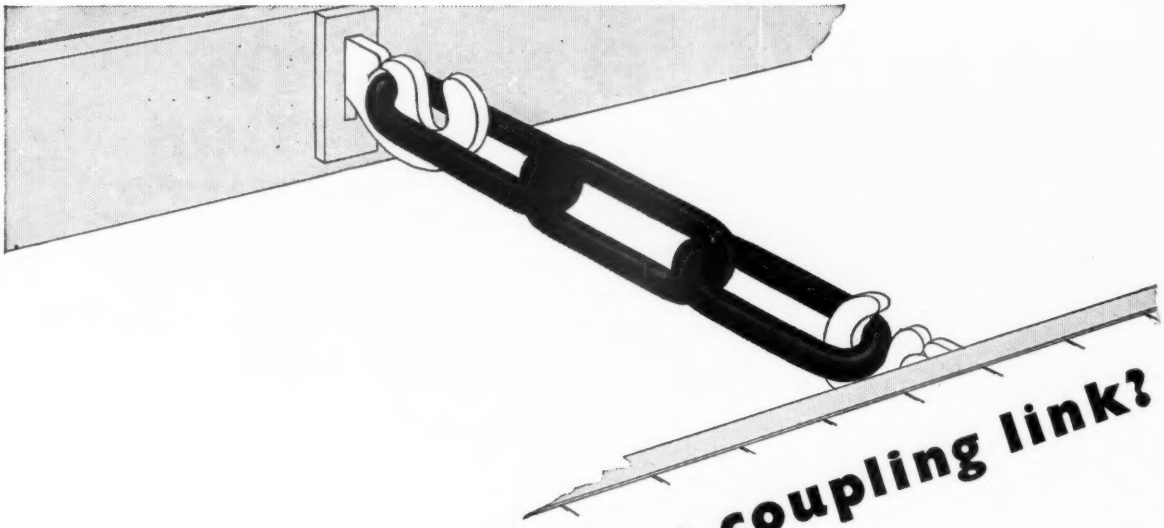
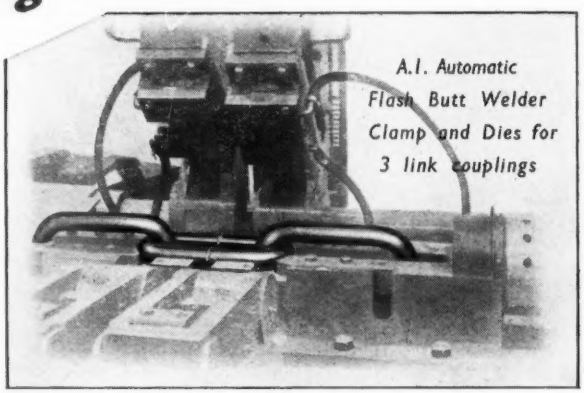


HOW LONG to forge a coupling link?



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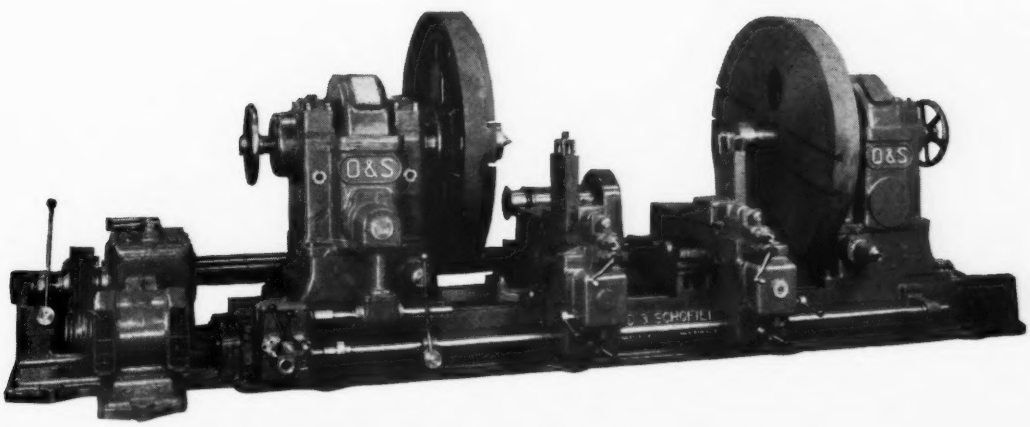

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CONTENTS

Passenger Charges Scheme, 1951

SIX months after the submission to the Transport Tribunal by the British Transport Commission of its draft Passenger Charges Scheme, 1951, the full hearing before the Tribunal starts next Monday. Allowances must be made for the large amount of preliminary work in such cases, for the necessity of holding, in July, a preliminary hearing to determine the eligibility of objectors, and for the legal vacation. The delay nevertheless is an example of the slowness and inflexibility of the existing machinery for raising nationalised transport charges to which the Commission drew attention in its report for 1950, and is the more regrettable in view of the existing deficit and of rapidly rising costs—even although there has been a marked improvement in British Railways and London Transport passenger receipts during the past few weeks. The scheme itself was discussed in our April 20 issue. It has been designed to yield some £17 million additional revenue in a full year; this amount may well have been offset already by recent rises in steel and other prices—apart from the problematical minimum of £9½ million additional annual cost of the railway wage increases shortly to be considered by the Railway Staff National Tribunal. To realise the additional amount, having regard to the competition of privately-owned transport, much ingenuity has been shown in the case of railway fares, as we pointed out last April, in selecting for varying amounts of increase the fares of those who are compelled to travel by rail. Against this, many anomalies will disappear if the scheme goes through. Whatever form it took, the scheme was bound to arouse much opposition, which may increase in the light of a tendency on the part of road passenger fares to rise as the result of increased fuel oil, rubber, and other costs, as was commented on in the B.T.C. report for 1950. Over 200 objections have been notified to the Transport Tribunal, and it is unlikely that the hearing will end soon enough for any changes authorised to take effect this year. The President of the Tribunal is Mr. Hubert Hull; Sir Malcolm Trustram Eve, K.C., is the chief advocate for the Commission; and the principal witnesses for the Commission will be Sir Reginald Wilson, Comptroller of the B.T.C., Mr. A. B. B. Valentine, Member of the London Transport Executive, and Mr. J. E. M. Roberts, Executive Officer (Rates & Charges), Railway Executive.

Election Manifestoes

THE political party manifestoes are cautious in their attitude to nationalised transport. The Conservative manifesto merely repeats statements made in the last session of Parliament: that publicly-owned rail and road transport will be "reorganised into regional groups of workable size," that private road hauliers will be given a chance to return to business, and that "private lorries will no longer be crippled by the 25-mile limit"; the reference to reorganisation of the railways needs clarification, which it is to be hoped will be included in the party's more detailed policy statement to be issued shortly. The salient point of the Conservative manifesto affecting industry is the imposition of "a form of excess profits tax to operate only during the exceptional period" (of rearmament), so as to offset any fortuitous rise in company profits caused by the abnormal economic consequences of rearmament. All further nationalisation, state the Conservatives, is to be stopped. Coal is to remain nationalised, with more decentralisation and "stimulation of local initiative and loyalties," though wage negotiations remain on a national basis. The Liberal Party proposes to amend the road vehicle licensing system, and "throw open road haulage to private enterprise"; a "drastic overhaul of the present railway structure" is called for, with "opening up of the (railway) industry to free competition from road transport." The Labour Party manifesto does not mention nationalisation as such, though the party intends to "take over concerns which fail the nation and start new enterprises wherever this will serve the national interest."

Deferment of Railwaymen

THE decision last week by the Trades Union Congress general council to ask the Minister of Transport to consider further the possibility of deferment of military service for certain operating grades of railwaymen seems to have been based on renewed fears of the railways' inability through manpower shortage to handle coal traffic during the coming winter. These fears were also the cause of the T.U.C. urging the three railway unions—as the price, perhaps, of support for their wage claim now under consideration—to "give urgent consideration" to increasing operating efficiency, which means manpower economy, the objective since February of the Special Joint Committee of Railway Executive and union representatives. Whether there is now any more reason for such misgivings than at any other time in the past six months is debatable. We ourselves have advocated deferment, at least as a palliative, for many weeks past. The situation was well known to the Ministers both of Transport and of Labour & National Service some months ago, but although mention of the possibility of deferment for railwaymen was made more than once during the last session of Parliament, no decision has been announced. It seems clear now that no decision can be hoped for until the newly-elected Government is in power next month.

Competitive Airways Fares

IT was announced last week by Aer Lingus that, as from October 21, seventeen day excursion rates, at reductions ranging from 3½ to 11 per cent., are to be introduced. From the railway point of view these excursion rates will be highly competitive, at least with first class fares charged for the monthly return tickets of the main L.M.R. London-Dublin route *via* Holyhead and Dun Laoghaire. From

London to Dublin the Aer Lingus rate will be £9 18s. The London-Dublin first class monthly return fare is £8 7s. 7d. This, however, takes no account of the incidental expenses incurred on the journey. Porterage, meals in the train, cabin accommodation in the ship, and so forth, are additional items which can easily account for the monetary difference in the two fares. From the viewpoint of business travellers the time saved in the journey between the two cities (4 hr. by air, 10½ hr. by rail and ship) may well make possible substantial economy. During the winter months some of the delays and irritations to which railway travellers on this route have been subject probably will not occur, and winter weather conditions may not be so favourable to air travel. Nevertheless, it is on routes such as this, involving a sea crossing, that British Railways would be well advised to take very seriously the competitive power of air transport.

Overseas Railway Traffics

BY September 21, successive increases in traffics of the Antofagasta (Chili) & Bolivia Railway since the beginning of the year have brought the total advance in receipts for 1951 over those for the equivalent period of 1950 up to £2,039,736, at £4,471,700. During the two weeks ended September 21 there were improvements by £43,320 and £36,840 and total traffics for the fortnight amounted to £226,440. Traffics of the Salvador Railway for June, the last month of the financial year 1950-51, were C129,000 higher at C250,000, and brought receipts for the full twelve months up to C2,117,000, as compared with C1,852,000 for the previous year. In the first month of the current financial year, 1951-52, Salvador traffics continued to improve with a C20,000 advance to C125,000. Costa Rica traffics for August rose by C150,407 to C1,295,820.

British Transport Commission Statistics

THE total staff of British Railways at the end of Period 8, to August 12, numbered 600,414, compared with 618,421 for the corresponding period of 1950. No detailed comparison with last year is possible, because of regrouping in recent weeks. Comparison with the preceding period shows that whilst the total rose, from 599,765 for Period 7, there were slight decreases in traffic inspectors and foremen, control office staff, locomotive running shed, and locomotive and carriage and wagon workshop staffs; there were slight rises in nearly all other grades, including operating. The latest analysis of passenger traffic, for the calendar month of June, shows that whilst passenger receipts were 5·6 up on June of 1950, passenger journeys rose 3·3 per cent., with increases of 26·6 per cent. in cheap-fare and of 54·2 per cent. in full-fare journeys. During Period 8, perhaps the height of the summer travel season, British Railways ships' passenger receipts, including Continental and Irish services, were 5·5 per cent. above last year's. Restaurant-car takings for the same period were 15 per cent. up on 1950.

Raw Materials Conference

THE conference of Commonwealth Ministers held in London last week to discuss problems of production and exchange of raw materials and manufactured goods seems to have gone some way to achieving its objectives. Mr. R. R. Stokes, Lord Privy Seal, presiding, said that engagements were entered into regarding *inter alia* the supply of metals from all parts of the Commonwealth. The Ministers agreed that it was important both to ensure continuous development of supplies of raw materials from Commonwealth producing countries to keep pace with the expansion of industry and to maintain free flow of exports of capital goods and other essential manufactures. It was also generally agreed that there was need to avert violent price fluctuations. It is satisfactory to hear that in several Commonwealth countries plans are well advanced for expanding supplies of certain materials which are in particularly short supply, such as copper, in which the Commonwealth contributes both to its own needs and to those of the rest of the world. The main factor, the conference agreed, is the provision of capital equipment. The conference recognised the need for continued and increased supplies of capital and other essential goods, both for the economic development of Commonwealth countries, and for stimulating the contribution they could make towards increasing supplies of raw materials.

Agreement on G.N.R.(I.) Purchase

AT a meeting in Belfast on Monday last between Mr. Sean Lemass, Minister for Industry & Commerce of the Republic of Ireland, and Mr. W. V. McCleery, Minister of Commerce, Northern Ireland, agreement was reached " on all points of principle " concerning the acquisition of the Great Northern Railway (Ireland). The conference lasted some four hours and representatives of the company were twice called in; they included, besides Lord Glenavy, Chairman, Mr. J. B. Stephens, Deputy Chairman; Messrs. J. M. Carroll and R. S. Stokes, directors; and Mr. G. B. Howden, General Manager. They and Mr. Lemass's party travelled on the " Enterprise " and were welcomed on their arrival at 1.15 p.m. by Mr. McCleery and his delegation. Lord Glenavy afterwards stated that the directors would meet the stockholders this week. It is uncertain whether there will be partitioning of the railway but reported that, contrary to beliefs in some quarters, no increase in the original acquisition price of £3,900,000 was agreed to. The directors are to communicate further with the Ministers after receiving the views of the stockholders on the new developments.

A Uniform Tariff in East Africa

UNTIL now a disparity has existed in the rates and charges of the two sections of the East African railway systems—Kenya-Uganda and Tanganyika. The opportunity has been taken both to remove anomalies and bring the charges more into line with present price levels, in conformity with the obligation placed on the administration of the East African Railways & Harbours when it was formed on May 1, 1948. Revision in Tanganyika was complicated by the existence of the metric system—a legacy of the German administration. It is remarkable—and a tribute to its efficiency—that, almost alone among railways, the administration has so far been able to absorb rising costs without passing them on to the public. In a broadcast on the introduction of the new tariff, Mr. A. Dalton, General Manager, East African Railways & Harbours, explained and gave examples of the changes. On the goods side, for instance, it was necessary not only to reconcile the difference between the Kenya-Uganda and Tanganyika rating systems but at the same time secure more revenue from the shorter hauls than allowed by the Kenya-Uganda rating structure, framed in the early days when there was little movement of internal traffic over short distances. The new passenger fares are expected to produce some 20 per cent. more revenue.

East Indian Railway Reunion

THE 48th annual reunion dinner of the officers of the East Indian Railway was held in London on September 26, with Mr. O. R. Tucker in the chair. During his speech, which is reported elsewhere in this issue, the Chairman referred to the process of rehabilitation on the East Indian Railway during 1950-1951. The Government of India has sanctioned the restoration of a number of branch lines which were dismantled during the war, namely, Tinpahar-Rajmahal, Unao-Madhoganj-Balamau, and Bijnor-Chandpur Siau, and the State Government of Utter Pradesh has decided to erect a cement factory at Robertsganj. The construction of a new line to link the factory with Chunar Station has been put in hand; the line will be 45 miles in length and will cost approximately Rs. 265 lakhs. A planned drive to remove illiteracy among E.I.R. employees has been instituted by the Government of India and an expenditure of Rs. 1·5 crores has been sanctioned in this connection. The expenditure will be spread over three years.

An Air-Conditioned Demonstration Coach

ONE of the difficulties which must face British manufacturers of railway equipment required primarily for use on overseas railways, is the effective demonstration of their products in this country. British Railways do not use air-conditioning equipment for their passenger rolling stock, but on many lines abroad it is essential for the comfort of passengers. The largest producers of equipment of this type outside the United States of America is J. Stone & Co. (Deptford) Ltd. and the products of this undertaking have been, and are being, fitted to coaching stock destined for use in many parts of the world. In some cases Stone's equipment forms part of the specification for passenger stock which is built outside this country. Recently the company has installed and equipped a demonstration coach at its Deptford works which enables it to display its air-conditioning plant and a number of other of its products to potential overseas customers. The space outside the coach can be raised to any desired degree of heat and humidity, so that realistic demonstrations of the effectiveness of the plant may be given. The body of the vehicle has been built up on struts from the underframe, to enable a clear view of the equipment fitted below the coach. An illustrated description is given elsewhere in this issue.

Electrification in Norway

THE latest extension of the electrified network of the Norwegian State Railways, from Lilleström to Charlottenberg, is described in an article elsewhere in this issue. It is now possible to travel by electric train to Oslo from Stockholm as well as from Gothenburg, though some trains will continue to be steam-hauled on the Norwegian side pending the delivery of electric locomotives now under construction. Most of the electrified lines in Norway radiate from Oslo, the capital, but there is an interesting section in the heart of the mountains, running down from Myrdal, on the steam-operated Bergen line, on gradients of 1 in 18 but worked by adhesion, to Flam. There are three important main line sections being electrified or scheduled for electrification: Lilleström-Hamar (Trondheim line); Bergen-Voss (Bergen line); and Egersund-Stavanger, the final section of the Sörland line. The present total of electrified mileage—640, out of a total mileage of 2,719—is meritorious in view of the low traffic density, except in the immediate neighbourhood of Oslo. The system used is 15,000 volts, $16\frac{2}{3}$ cycles; it remains to be seen whether Norway will decide to experiment with 50-cycle traction in view of the success achieved on the Annecy line in France.

The Implications of 50-cycle Traction

THE French National Railways convention on 50-cycle traction, to be held at Annecy from October 12-15, reference to which was made in our September 28 issue, may well prove a turning point in the history of electric traction. Potentially it is the most important event in electric traction since the mercury-arc rectifier became practicable for railway work. Just as the Institution of Electrical Engineers Traction Convention last year was a summing-up, a comprehensive survey, of achievements in traction during an era of predominantly direct current, so this forthcoming Annecy convention may indicate the path of electric traction in a future which may well be predominantly a.c.

The implications of a transition from d.c. to a.c. traction are far-reaching; they will call for the re-orientation of much of our thinking in such diverse fields as manufacture, substation practice and the performance of motive power equipment, whether locomotive or motor coach. Last but perhaps most important it will call for some fresh thinking by electric traction engineers who almost alone of professional electrical engineers have been able to discern the behaviour of electricity by the simple measuring stick of Ohm's Law. To them now will come the horrifying vision of locomotive performance seen through an impedance triangle, and of substation spacings determined with an eye to voltage drops affected by the locomotive power factors. A small part of this process of re-education took place last week in London when one of the subjects discussed by the International Electrotechnical Commission meetings was the standards to be applied to a.c. traction.

Without knowledge of the papers to be read and the practical successes to be revealed at Annecy one must not assume too much, but, clearly, the S.N.C.F. would not have extended its generous invitation to this convention unless it was believed that the results so far obtained justified its being held. This view is supported by the S.N.C.F. decision to proceed with further electrification at industrial frequencies. It seems, therefore, that the trial line from Aix-les-Bains to La Roche-sur-Foron has worked successfully and that electric traction at industrial frequencies is practicable.

The repercussions of such a result will not at first be great; many countries are committed too far with other systems for changes to be sudden or sweeping. However, the potentialities are immense, though conditioned to some extent by the characteristics of the existing system to be supplanted. Where this is already high-voltage a.c. at $16\frac{2}{3}$ cycles the change to 50 cycles will render the frequency-changing equipment redundant; the switching equipment, overhead lines and feeders will carry similar currents at similar voltages and so will be unaffected by the change in frequency. The existing transformers in the frequency-changer stations will, generally, be unsuitable for the new system as the phase transformation from three-phase input to single- or two-phase output which was a second function of the frequency-changer, will require to be carried out by a Scott-connected transformer group if balanced three-phase loading is to be maintained. There is reason for thinking that on a large industrial network the imposition of an asymmetric electric traction load is acceptable and does not give rise to the serious consequences usually suggested. If this proves in practice to be so, simple single-phase transformer stations fed by two wires from the nearest high-voltage industrial network will be the main requisite in fixed installations. Such an arrangement will effect an appreciable saving even in comparison with $16\frac{2}{3}$-cycle high-voltage traction; the saving on changeover to 50-cycle traction from 3,000 V. or lower direct current would be even more marked as the currents fed to the track would be greatly reduced, and much of the elaborate heavy current switchgear on the d.c. side would be eliminated. The saving would be most marked where rotary converter substations were in use; the elimination of mercury-arc rectifier substations would not show such great benefits in reduced maintenance, higher efficiencies and lighter foundations.

Turning now to the rolling stock, it is perhaps unnecessary to labour the point that 50-cycle traction has previously foundered on the impracticability of building 50-cycle single-phase traction motors. This problem has now been successfully solved as far as commutation and reliability are concerned, but the solution is of Continental origin. Most Continental railways achieve very high standards of maintenance, and it may be that not all railways could equal the standards necessary for the upkeep of elaborate equipment such as the 50-cycle traction motor. For example, the motors in the Co-Co 50-cycle locomotive CC 6051 have 16 brush arms. However, the principal doubt arising is that the 50-cycle motors characteristic may not be suitable for general application to traction in the same way as is the series direct-current motor. A comparison of tractive effort/speed curves for motors of identical hour rating indicates that the d.c. series motor develops a better tractive effort at low speeds than the single-phase motor; this is more marked in comparison with 50-cycle than with $16\frac{2}{3}$-cycle motors. On the other hand, the single-phase motor maintains its tractive effort better at high speeds; again the effect is more marked at 50 cycles than at $16\frac{2}{3}$ cycles. From this comparison the conclusion can be drawn that 50-cycle motors are less suitable than d.c. series motors for suburban services with frequent stops, but the difference is insufficient to make 50-cycle traction impracticable for suburban services. They are highly suitable for express and freight workings, and at maximum speeds the 50-cycle motor gives

practically double the tractive effort developed by a similar d.c. series motor on full field.

Many other criticisms have been levelled at 50-cycle traction, for example, the interference with telephone lines, and with track circuits, and power factor correction of the overhead line. One undeniable difficulty in feeding the track is in finding convenient tapping points on the 50-cycle network in non-industrial areas. No doubt many of these objections will be adequately answered at the convention.

The final question which comes to mind is to what extent the Annecy conference will vitiate the recent British Railways electrification report. We commented in an editorial note last week on the importance of our electrical manufacturers having designs prepared against the possibility of a strong trend towards 50-cycle traction in export markets. It is no less important that British Railways should subject their report to rigorous re-examination in the light of the conference.

Holiday Travel Expenditure

AN article in the August issue of the *British Transport Review* entitled "Holidays and Holiday Expenditure", by Mr. H. E. Osborn, Director of Accounts & Budgets, British Transport Commission, discusses the travel habits and expenditure of British people as revealed by inquiries instituted by the Social Survey Division of the Central Office of Information. Three such inquiries were conducted. The last covered the first ten months of 1949; nearly 3,000 adult men and women were interviewed, and particulars obtained. Estimates of total holiday expenditure were given in all cases; only for about one-half of the holidays taken away from home, that is, for about one-quarter of the adult population, could an analysis be given of expenditure.

The average amount spent on holidays away from home, averaging nine days, was £8 2s., of which 17s. 10d. was for railway fares. As railways were used on only some 50 per cent. of holidays, the average spent per head on rail travel was about 33s.; this, Mr. Osborn points out, does not necessarily mean that 50 per cent of holiday-makers went by rail to and from their holiday destination, as the averages include instances where railway fares were incurred only for trips while on holiday, which probably is not an important factor. The average journey to or from home was rather more than 100 miles. Persons who spent their holidays in licensed hotels spent the most on railway travel; those going to youth hostels spent 53s. a head on rail fares, but only 34 per cent. travelled by train.

A comparison is made by Mr. Osborn between the estimates of expenditure on holiday railway fares derived from the data produced by the C.O.I. survey on the one hand, and British Railways passenger receipts from the various fare categories on the other. The latter comprise full fares, monthly returns, excursions, and cheap-day tickets, but exclude workmen's and season tickets, warrant traffic, and so on. The railway receipts are shown as averaging £5 million for the first four months of 1949: the average is shown for purposes of comparison with the C.O.I. estimate of holiday fares, in which month-by-month figures are not given for January—April. In May, June, and July, the railway receipts rose from £5 million to £12 million, and fell to slightly over £10 million for August, £8 million for September, and less than £6 million for October. The estimate of expenditure on holiday railway fares is not strictly comparable, as tickets were probably bought a little before the beginning of the holiday. Nevertheless the trend is very similar. For January—April, 1949, the average estimated expenditure on holiday railway travel was about £500,000. It then rose, through slightly over £1,000,000 for May and £4 million for June, to £8 million for July. It remained at that figure for August, and then fell to £4 million for September and to under a million for October. The proportion attributable to holiday travel, of British Railways passenger receipts, including workmen's, season tickets and so on, averaged some 8 per cent. for January—April, 1949, rose to 12 per cent. for May and to 55 per cent. for July and August, then fell to less than 40 per cent. for September and 10 for October; against this, the average percentage of railway receipts for January—October, 1949, attributable to holiday travel, was about 25. This, states Mr. Osborn, shows that the rapid rise in railway receipts during the summer is wholly accounted for by holiday fares, while the residue of business and other travel declines. The drop in business travel as a result of summer holidays, he infers, more than offsets the summer increase in day trips and outings not covered by the estimate of holiday railway travel expenditure.

The Social Survey also made available to London Transport Executive certain unpublished information, from which it has been computed that, in August, the population of London is reduced by an average of 7 per cent., or 600,000, as the result of the holiday exodus, partly offset by an influx from the provinces. For the year as a whole, the net holiday exodus from London is estimated to cause an average annual reduction of 130,000 in the population.

Sampling, which costs little in time or money, thus has produced a fairly clear picture of the travel habits of a large population. Mr. Osborn points out that the techniques used in the inquiry have already been made use of by the B.T.C., as for instance by the London Transport Executive in their "London Travel Survey, 1949"; sampling is also used by the B.T.C. for statistical purposes, as in the "spot" recording of train and bus loads. There is little doubt, he states, that through the development of sampling techniques, with perhaps some change in the procedures for collecting information in the various Executives of the B.T.C., a greatly increased range of valuable data could be obtained.

East African Railways & Harbours

WE have now received from Mr. A. Dalton, General Manager, East African Railways & Harbours, a copy of his report for the year ended December 31, 1950, on the administration of the railways and ports in Kenya, Uganda, and Tanganyika; the steamer services on Lakes Victoria, Kioga, Albert, and Tanganyika and on the River Nile; and on the motor transport services in Uganda and Tanganyika.

During the year the gross revenue earned was £11,435,869, the highest yet recorded and £723,693 higher than the corresponding figure for 1949. On the other hand, working expenditure again increased rapidly, and, including contributions of £938,489 to the renewal funds, totalled £8,822,733, £1,035,853 more than in the previous year. Net earnings were therefore £2,613,136, from which £880,557 had to be deducted to cover interest and sinking fund charges, leaving a surplus of £1,732,579 available for appropriation. The corresponding sum in 1949 was £2,142,889. Out of the 1950 surplus £1,100,000 was contributed to the betterment fund, and £66,700 to the special sinking fund. Also, in addition to the normal contribution, a special contribution of £469,610 was made to the renewals funds to meet the rising cost of replacements. After all appropriations, the unallocated balance carried forward was £242,213.

The following are some of the more important operating results in 1949 and 1950:—

	1949	1950
Railways, steamers, and motor transport—	(Thousands)	
Total train-mileage	6,689	7,204
Passenger journeys	5,993	5,936
Goods tonnage carried	3,045	3,302
	(£ thousands)	
Coaching receipts	1,444	1,468
Goods receipts	6,805	7,557
Total receipts	8,525	9,327
Working expenses	5,522	6,297
Harbours—		
Receipts	2,108	2,001
Expenditure	1,297	1,379

Acceleration in the increase in traffic handled is shown by the fact that the total ton-mileages in 1948-49-50 were 900, 1,047, 1,207 million respectively. To meet the 15 per cent. increase, imposing a severe strain on the transport service, it was found necessary to decline all short hauls of

25 miles and under during most of the year, if they could be undertaken by road transport. This allowed all available capacity to be concentrated on long-haul traffic.

The capacity of the Kenya-Uganda section of the railways was increased by the addition of 24 Beyer-Garratt locomotives, and, although only 236 new wagons out of the large number on order were placed in service, the extra locomotive power made a better wagon turn-round possible. The average monthly ton-mileage handled during 1950 was 80 million, 6·6 per cent. higher than the previous record for a peak month. In fact, every individual wagon was doing 50 per cent. more work than it did in 1939.

The following are some of the more important events of the year: (1) the opening of the new main-line realignment between Nairobi and Nakuru, with its easier gradients and increased capacity; (2) the long, severe drought, causing serious damage to locomotives by the use of unsuitable bore-hole water; (3) labour troubles at the port of Dar-es-Salaam resulting in low tonnage handled until new labour could be recruited; (4) completion and opening of the new 135-mile branch line connecting the Mpanda mineral area with the Central Tanganyika line; (5) serious damage caused by abnormal rainfall to the newly-opened line from the port of Mkwaya to the ground-nut area; (6) the visit of the Duke and Duchess of Gloucester; and (7) the refusal of virtually the entire African railway staff in Nairobi to join in the political unrest and strike among all other categories of African labour in the capital.

The principal surveys undertaken were for the north-south link, and for an extension westwards from Kampala, in Uganda, to the copper deposits at Kilembe; the construction of the first 50 miles of the latter line was sanctioned. There were three serious accidents during the year. Eleven Africans were killed and ten injured when travelling in a goods train that became derailed on the Tanganyika Central line. In another goods train derailment, 50 km. from Dar-es-Salaam, five railway employees were killed. One African passenger was killed and several were injured when a mail train from Uganda was derailed in Kenya. Failure of the human element was the cause of the accident in all three cases.

Danish State Railways

THE working results of the Danish State Railways in the year ended March 31, 1951, are shown in the table below, in comparison with the corresponding figures for 1949-50:—

	1949–50	1950–51
Km. open	2,840	2,834
Passengers on railways (millions)	94·8	98·9
Goods (million *tonnes*)	7·5	7·8
Train km. (millions)	33·2	35·6
Operating ratio	112·1	104·7
	Million Kr.	
Passenger receipts	182·4	195·9
Goods receipts	108·5	129·6
Bus receipts	17·3	20·6
Other receipts	16·6	14·4
Gross receipts	338·4	375·7
Working expenditure	379·2	393·3
Net deficit	40·8	17·6
Depreciation charges	8·4	10·1
Interest on capital	15·8	18·6
Deficit after charges	65·0	46·3

The rise in the number of journeys was almost exclusively in the Copenhagen suburban area; this traffic amounted to 59,400,000 passengers against 55,500,000 in the preceding year. Also, the number of journeys on buses showed a considerable increase. The total goods traffic rose by 5 per cent. Although ordinary goods in wagon loads declined a little, there was a considerable increase in goods to and from abroad, and also in transit goods, for instance road motor vehicles from Germany to Sweden.

Rates and fares were raised from June, 1950, and it was estimated that this would bring the receipts up by Kr. 30,000,000, thereby reckoning with some falling-off in traffic. This did not in fact occur, and the result was an increase in receipts of Kr. 37,300,000. Higher receipts from postal traffic also resulted from increased rates. Working expenses were up by Kr. 14,000,000, mainly due to increased wages and salaries in spite of a reduction of 300 or 1·3 per cent. in the number of staff.

Freight Movement on British Railways

(By a Correspondent)

THE latest issue (Period 8) of *Transport Statistics* shows that freight traffic increased by only 44,000 tons, or a fifth of one per cent., during the four-week period to August 12. A decrease of 228,000 tons (10·3 per cent.) in the Scottish Region was offset by an additional tonnage of 220,000 tons (7·6 per cent.) originating in the Western Region. There was a slight falling off in the North Eastern, cancelled out by small increases in the London Midland and Eastern Regions. The average length of haul was nearly 77 miles. For the first time in any four-week period, the average ton of coal was carried for over 60 miles.

These long hauls swelled net ton-miles by 49½ million (3·5 per cent.). The Eastern Region alone worked 21½ million more ton-miles, compared with increases of 11·1 million for the London Midland and 9·8 million for the Western Region. The total ton-mileages of the Eastern and Western Regions were 296·6 million and 276 million respectively, a difference of 7·4 per cent. Ton-mileage was up 3·6 per cent. in the North East, but down 2·8 per cent. in Scotland.

In the English Regions, the train load was heavier and the number of wagons per train larger, as might be expected in a period of growing traffic volume. The London Midland Region raised its train load by 10·6 tons to 176 tons, at the cost of reducing speed to 7·51 m.p.h. The Western Region load was 5 tons higher at 156 tons, again with a drop in speed to 8·97 m.p.h. On the other side of the country the Eastern Region worked a load of 157 tons at 8·92 m.p.h., a shade faster than it moved a load of 148 tons in August, 1950. With a depleted traffic, the Scottish Region advanced its train speed to 11 m.p.h. and the North Eastern was only a tenth of a mile per hour slower.

The table below sets out, for the four "heavy" Regions in England, the percentage variations in the statistics bearing on traffic movement. It proves that the Eastern and North Eastern succeeded in adapting their working to cope with unusual changes in transport requirements. The other Regions lost mobility, as they have done all through the year. The Western Region failed to maintain the amount of work performed in a train engine-hour during the period under review, so that its current operating costs are probably high.

PERCENTAGE VARIATIONS BETWEEN 1951 AND 1950

—	Region			
	London Midland	Western	Eastern	North Eastern
Freight train-miles	− 4·1	+ 0·2	+ 1·7	—
Wagon-miles	− 2·0	+ 1·3	+ 2·9	+ 2·5
Train engine-hours in traffic	− 1·4	+ 4·2	+ 1·2	− 2·7
Net ton-miles per train engine hour	+ 3·6	− 0·6	+ 5·4	+ 6·8
Wagon miles per train engine hour	—	− 3·0	+ 0·8	+ 5·6
Freight train speed	− 2·5	− 3·7	+ 0·4	+ 2·7

The aggregate statistics for the 32 weeks to August 12 do not justify the gloomy view taken in some quarters of British Railways ability to provide adequate facilities for freight traffic during the coming winter. Tonnage was up by only 716,000 tons (0·4 per cent.). Net ton-miles increased by 376 million (2·8 per cent.), but 300 million of the total was due to coal and minerals passing in full wagons loads.

The number of loaded wagons forwarded in the period was less by 393,000 (1·8 per cent.) and, though loaded wagon-miles increased by 6¼ million (0·3 per cent.), that was caused by the extra mileage of coal wagons. Empty wagon-miles decreased by 18·8 million (2·3 per cent), making total wagon-miles fewer by 12½ million (0·4 per cent.). These figures scarcely indicate that British Railways are in danger of being overwhelmed by any extraordinary accretion of new traffic.

LETTERS TO THE EDITOR

(The Editor is not responsible for the opinions of correspondents)

Gloucester Stations

September 24

SIR,—When passing through Gloucestershire recently, I noticed that the two stations there have received individual names—Central for the former Great Western, and Eastgate for the former L.M.S.R. Doubtless the good citizens of Gloucester will recognise their stations, but for most of us "Western" and "Midland" would have been better, being both historically correct and therefore more mnemonic. The new names do not appear in the new Winter timetables, where the initials W.R. and L.M.R. continue to be used. I hope therefore that the appropriate authority (the Western Region or the Railway Executive) will consider adopting the alternative names suggested above.

Whenever I travel by the Gloucester route, I cannot help noticing what an excellent interchange station Churchdown would make if only more trains stopped there. It has two island platforms, with room for their extension, each platform having trains in one direction only. Transfer between the former G.W.R. and L.M.S.R. routes would involve, at the most, crossing a platform. This would avoid the interminable trudge over the long bridge at Gloucester (over two bridges for most northbound passengers). In spite of these bridges, I am grateful for the facility that allows me to travel back from Newport by this route. Such facilities should be much more widely advertised.

Yours faithfully,

WILLIAM J. SKILLERN

15, Hollymount Road, Stockport

Restaurant Car Services

September 22

SIR,—The announcement by the Hotels Executive of its plans to increase buffet car services, with the object of reducing the restaurant car deficit, brings once again the whole question of train refreshment services into prominence.

During the past two years, considerable progress has been made in raising the standard of the meals served, particularly on the London Midland Region, once noted for its cod-or-sausages-only meals. The improved service must be noticeable to the holiday traveller, who probably only makes one journey each summer. I have travelled to Scotland two years in succession by the "Capitals Limited" and am pleased to say that the meals served this year were much better than those taken in 1950.

It is difficult to reconcile the fact that all restaurant and buffet cars are controlled by the same Executive. Before nationalisation one certainly expected differences in service, but under unified control the standard of service should at least be consistent. This results in the public adopting the attitude that a train meal is a gamble, as in most cases no detailed day-to-day menus are displayed. It would be a good idea to design a type of menu card where it would be possible to insert the dishes available before the service of the meal. This would overcome the difficulty of printing in advance occasioned by the uncertainty of food supplies.

The Hotels Executive has stated that on some trains there is ample evidence to show that some passengers prefer the snack type of meal, as opposed to the full restaurant service. Surely the answer to this question was found in the tavern cars. These cars, despite the over-publicised "tavern" aspect, filled a need on trains, making it possible to have the choice of a full meal or a snack at the buffet. Although eight of these two-car units were built, those on the Eastern Region have not re-appeared since their withdrawal for alterations to the windows. These cars may prove popular on long-distance journeys where a passenger joining at an intermediate station, for a short journey only, may not have time for a full meal.

When examining the current London Midland Region timetable, it is difficult to understand why two independent sets of cars are included in the following services.

Train	Restaurant car between
10 a.m. from Euston	London and Glasgow London and Perth
11.45 a.m. from Euston	London and Manchester London and Barrow
3.2 p.m. from Preston	Perth and London Barrow and London

Would it not be better to withdraw the Perth cars between Carlisle and Euston, working one car only as follows: 9 a.m. Perth to Carlisle, and 4.17 p.m. Carlisle to Perth? This would save on car and staff, which could be used elsewhere. The 6.40 a.m. London to Barrow would be a good example.

Yours truly,

B. PERREN

43, Greenway, London, N.14

Closing of Branch Lines

September 24

SIR,—The serious amateur in railway affairs enjoys a unique position because he appreciates quite a lot of both sides of the game. Among his working colleagues, for example, he notes that the large-scale closing of redundant lines is taken as a sign of general obsolescence. Every new announcement of a service withdrawn feeds this feeling.

Few branch lines are so inconvenient to work as to be legitimate dead wood. The damage is caused by the apparent needless closure of lines without convincing explanation why they could not be made to pay. Such lines are the Nidd Valley, in Yorkshire, closed to passengers last March, or the Rhyl-Corwen line, which is reported to be under the hammer. Closure of such lines as the latter, with rail connections at both ends, weakens the confidence of railwaymen and of those of the public who would prefer trains if fares were adjusted to suit the district and encourage traffic; it suggests a feeling of "our turn next."

Among the travelling public are many to whom every mile of line closed is something of a blow—not only those with an intrinsic liking for railways and railway atmosphere but also those to whom two miles in a road vehicle means sickness, and to whom, therefore, closed lines mean closed country. There are also people with perambulators and invalid chairs, students and business men who want to read or write.

It is incredible that the diesel railcar developed by the former G.W.R. is not being considered for use all over the country. I recently had my first experience of them around Birmingham and found them superior to any bus, and, I imagine, no dearer to run. With extended operation by such cars, many branch lines now deleted from *Bradshaw* would be earning money and goodwill.

An opportunity to develop passenger traffic was the elimination by unification of the old artificial frontiers between companies' territories, such as between Huddersfield and Sheffield compared with Huddersfield and Leeds. A century-old direct rail link has created a habit in the Huddersfield public of travel to Leeds for shopping and recreation; local trains are usually well filled. No such habit takes Huddersfield to Sheffield; the reason almost certainly is the absence of a service of through local trains. A new service of local trains (or railcars), cheap-day returns, with a weekly bonus to intermediate stations on tickets sold, would bring new traffic. The official view is probably that no demand exists; an enterprising attitude would say that here was an opportunity to create a demand.

I believe that physical economies can do such psychological harm as largely to rob them of their merit if they are not understood by everyone interested, which in the

case of the railways means the entire nation. The experienced traveller knows that the picture may not be entirely as bleak as it seems, but great harm is done by its seeming bleak. I have covered 1,500 miles on British Railways this year and have not used a single dirty or not reasonably punctual train. My only criticism is the state of the tea room on the Eastern Section side at Victoria. All who have the health of the railways at heart, enjoy their use, and value their history and traditions (irrespective of political opinions on nationalisation), long to see this present period of inordinate criticism, retreat, public disfavour and official apologetics, brought to an end.

Yours faithfully,

WILLIAM B. STOCKS
Chairman, Huddersfield Railway Circle

22, Heatherfield Road, Marsh, Huddersfield

Some Railway Shortcomings

September 17

SIR,—Whilst agreeing with Mr. A. E. Grigg, whose letter appeared in your September 7 issue, on his statement that two of the main causes of railway inefficiency are lack of discipline and restrictive practices, I cannot leave unchallenged his third item—an inefficient control system.

"The Control Offices are an excellent example of inefficiency" he says, but does not prove his statement. I say that there is less evidence of inefficiency in the Control Offices than in any other section of the operating department. The Control Office is to the outside staff on the district as is the Government and the Ministries to the general public—simply a butt for all the adverse criticism that can be levelled at it. I would liken the Control Room to a mirror and say that any inefficiency one sees in it is that which is reflected from outside.

Examples of this occur continually. The yard inspector at "A" criticises the Control because he cannot get any information regarding trains from "B", overlooking the fact that the yard inspector at "B" has not given the required information to the Control, and also that he himself has not given relevant information about trains leaving "A" which will result in further criticism of the Control from other points. The guard or the driver criticises the Control because he is not relieved, while the real blame lies with some of his colleagues who have failed to turn up for duty.

The Control Office is a collection and distribution point for vital information, but unless the necessary information is gathered in it cannot be disseminated. It should be staffed by reasonably young men, who have not had considerable experience of outside working, for they are then too old, but who are quick to appreciate a situation and can assess what action should be taken or what assistance is required in given circumstances, who are of suitable temperament to exercise control and able to give definite orders, even to others of higher position, by virtue of their office.

A controller need not be able to handle a shunting pole or to drive an engine, but he must have sufficient railway experience to know what is done outside and to appreciate the difficulties. The Control Offices to-day are staffed by men from various grades and classes, and the ex-outside man has yet to be proved the most efficient controller.

I agree with your correspondent's last word "The right man for the right job is only commonsense."

Yours faithfully,

J. L. BROADHURST

14, Bordon Road, Cheadle Heath

Publications Received

British Transport Review, August, 1951.—This issue contains *inter alia* articles by Mr. A. C. B. Pickford, Executive Officer (Terminals), Railway Executive, on the visit to U.S.A. of the freight handling productivity team whose report was summarised in our July 27 issue; by Dr. F. F. C. Curtis, Architect, Railway Executive, on problems in the design of passenger coach interiors; and by Mr. J. E. Owen, Works Machinery & Plant Assistant, E. & M.E. and C. & W. Departments, Eastern and North Eastern Regions, on mechanisation in locomotive works. A survey of holiday travel expenditure by Mr. H. E. Osborn is discussed elsewhere in this issue.

The Bulleid Pacifics of the Southern Region. By Cecil J. Allen and S. C. Townroe. London: Ian Allan Limited, 282, Vauxhall Bridge Road, S.W.1. 10 in. × 7½ in. 80 pp. Illustrated. Price 10s. 6d.—To write on any contentious subject is to invite a certain amount of criticism and hostility, no matter how free from bias is the treatment, and bearing in mind the heated argument carried on for many weeks in our correspondence columns last year, it will not be surprising if the authors of this book arouse similar feelings in some circles. There should be little doubt though among most readers that the authors have produced a fair and balanced account from which a reasoned conclusion may be drawn. Every aspect of the matter has been considered, from the conditions which had to be faced in the design stage to the locomotives' performance on the road and operating problems encountered. A remarkably comprehensive selection of illustrations is included, and it is a pity that one or two are marred by unfortunate captions, the naiveté of which is unsuitable to a book of this type. This does not mar an instructive work that might well be read by those who have so vehemently condemned or ecstatically praised these locomotives, and its impartiality should go far to remove a number of prejudices on both sides.

Industrial Diesel Engines.—An illustrated catalogue (No. 695) issued by Tangyes Limited describes and illustrates the features of the WH series of horizontal cold-starting diesel engines for general industrial purposes and electricity generating. Two types of these engines are available, each of which is built in five sizes, and the capacities of each type are given in a series of tables, together with their principal dimensions. Fuel consumption figures are given.

Protection Against Corrosion.—The use of stainless steel as a protection against corrosion is the main feature of the latest issue of *Enchiridion* published by Firth-Vickers Stainless Steels Limited. Articles and illustrations describe the various uses of Staybrite steels in connection with acid storage tanks, medical instruments, phosphoric acid manufacturing equipment, and so on, and also included are details of recent developments relating to the cutting of stainless steel by the oxy-acetylene process, which consists of introducing a suitable flux into the burning zone of the blow pipe.

Prestressed Concrete Manual.—The Magnel-Blaton system of applying prestress to concrete is described in this loose-leaf publication issued by Stressed Concrete Design Limited. Included are a number of illustrations showing examples of prestressed concrete structures together with the methods used for pre-tensioning and post-tensioning. Other material covers the prestressing of circular structures. Dimensional diagrams are given of sandwich and distribution plates, grilles, and so on, with a diagram showing the spacing of grilles in parabolic cables.

Railway Track Maintenance.—A booklet illustrating the use of railway track maintenance equipment, covering the sawing, drilling, and grinding of steel rails together with coach screwing and sleeper boring, using a John Bull magneto petrol drill as a prime mover, has been published by the Howard Pneumatic Engineering Co. Ltd. Continuous operation without overheating is claimed to be possible by the provision of a large fan on the crankshaft which supplies a constant supply of air to the cylinders. The equipment is suitable for dealing with carbon steel rails, and special equipment, including clamps, and a slow-speed gearbox is available for heavy-duty work, such as drilling manganese steel rails.

THE SCRAP HEAP

Whale of a Load

A whale passed through Oslo on its way to Denmark, where it is to appear in an exhibition. Preserved by 14,000 lb. of formalin, it had been loaded on to a special railway wagon at Bergen and brought to Oslo. Thousands waited patiently at small country stations to catch a glimpse of this 120-ton passenger.—*From "The Times."*

Communication Cords

It was not until 1868 that Parliament made it obligatory on railway companies to provide "an efficient means of communication" in every case where there was a run of 20 miles without stopping. . . . Some curious cases of trouble were reported. One was that of the "Limited Mail" which, when a little distance short of Carlisle, struck a bale of carpeting which had fallen from a goods train.

This mishap gave a severe shaking to Post Office officials and the private saloon of the Duke of Sutherland, but though the communication cord was pulled "it failed to draw the attention of driver or guard, who knew nothing of any obstruction until the train reached Carlisle." Many systems of communications were tried by different railways. One suggestion for royal trains was that there should be a third man on the footplate who should face down the line of the train on the look-out for a signal given in the royal saloon.—*From "The Manchester Guardian."*

Hudson's Stag

A correspondent sends us the accompanying illustration of the stag flanking the house in Albert Gate, Knightsbridge, London home of George Hudson, the "Railway King." It gave rise to the Stock Exchange term of "stag" from Hudson's practice of applying for an allotment of railway shares and at once selling at a handsome profit.

The stag flanking Hudson's former London house

Photo] [R. D. Barrett-Lennard

Surrey Iron Railway

A section of track from the original Surrey Iron Railway will be displayed at Wallington Town Hall public car park.—*From the "Evening Standard."*

Waiting Room as a Sunday School

A correspondent explains the presence of a harmonium to be seen in the waiting room of Troutbeck Station in Cumberland. The fact is that the waiting room is used for a very different purpose on Sundays, when it is transformed into a Sunday school. Children gather from distant farms and the station resounds to the strains of hymns. The waiting room of Garsdale Station in Yorkshire also makes thoughtful provision for passengers. Here one finds a library, though there is no record of a passenger having missed a train through being absorbed in a book!

Seeing How it Works

Though railway lines may be closed, and cars and aeroplanes dominate the news of the world of speed and travel today, railways are fascinating still. A Belfast man, rounding a corner in a busy street, almost fell over a group of boys sitting rapt on the pavement, absorbed in study of a model of a train running on a track which curved in and out over the window space.

Why should railway models be so popular? I think the answer is that with a model one can see the whole system in operation. It would never do to go back to the old open coaches of the early railways, but what fun it must have been to travel in them on fine days, seeing the track and the signals and how the system worked.—*"The Roamer" in the "Belfast News-Letter."*

Railway Exhibits Leave the South Bank

No part of the South Bank Exhibition of the Festival of Britain which closed last weekend was more popular than the Transport Pavilion—and that not merely with small boys. People even crowded into the Underground carriage and hung on to the straps as if they had never done such a thing before in their lives.

Within two days of the closing, work on the removal of the railway exhibits was in progress. The Indian Government Railway locomotive, which provided a grandstand during the opening and closing ceremonies, stood on the carriage in which it was brought, and workmen used pneumatic drills to remove the brickwork casing, while others moved the trees in the fairway which had to be taken out to allow the locomotive to be drawn away. This locomotive should be out by the end of this week, after which the engines inside the pavilion, including the historic exhibits, will be taken out, and after that the Underground coach, with its cut-away section. The large diesel electric locomotive is being removed to the English Electric Co. Ltd. works and all the locomotives are expected to leave the exhibition site by October 27.

L.M.R. Locomotive "Amethyst"

The name *Amethyst* has been given by the London Midland Region to "Jubilee" class locomotive No. 45700 to commemorate the exploit of the frigate of that name which in 1949 ran the gauntlet of heavy bombardment as she sailed down the Yangtse.

No. 45700 is one of 191 locomotives of the "Jubilee" class built by the former L.M.S.R. in 1934/36. Designed by Sir William A. Stanier, they haul express trains on the main lines of the London Midland Region and Scottish Region. No. 45700 was previously named *Britannia.*

Afterthought

(*The South Bank Exhibition closed on September* 30)

This is a drab and melancholy day,
The captains and the kings have gone their way,
"Last Post" has sounded and the flags run down,
The York Road lions brood, with pensive frown,
No fatter now for all their festive fare,
Yet with new pathos in their placid stare.
What's to be done with that fantastic Dome?
Who wants an outsize toadstool for a home?
The Skylon still remains, aloof, alone,
Othello-like, its occupation gone.

The old Shot Tower still dominates the scene,
Like a great lighthouse, massive, sage, serene,
And Waterloo, that animated stage,
On which so many a fair and vivid page
Of Britain's pageantry is set, will smile
A little ruefully, maybe, the while,
Thinking of all the happy, laughing throng
Of children, who, the fleeting summer long,
Have mingled in their masses with the friends
Who came to Town from earth's remotest ends.

And now—what lies ahead for you and me?
A further dollop of austerity?
We'll have the memories of these madcap days,
When criticism slowly turned to praise,
And, if the future seems too bleak to bear,
We've always got an outlet at the Fair,
A good idea, that, it seems to me—
What's the next train to Queens Road (Battersea)?

A. B.

OVERSEAS RAILWAY AFFAIRS

(From our correspondents)

SOUTH AFRICA

Rising Costs

In opening the conference of the Railway Artisan Staff Association in Pietermaritzburg recently, Mr. P. O. Sauer, Minister of Transport, said that he hoped to be able soon to make an announcement about improved conditions for the railway staff as a whole.

Mr. Sauer said that this would make large inroads on the railway surplus for last year and that the rising tide of expenditure was disturbing. The 1950-51 railway year ended with a surplus of £8,400,000; before that there had been a series of deficits and certain usual payments to railway funds had to be suspended to balance the railway budgets. A start was now being made to put money back into these depleted funds and £1,500,000 of the surplus would be used for that purpose, but £4,000,000 had still to be made up.

Labour costs had gone up at a disturbing rate. Since 1939 there had been an increase of nearly 225 per cent. in labour costs, and in 1949-50 the labour bill amounted to £52,229,000 (68·14 per cent. of every pound earned). If increased cost of living allowances were granted, every rise of 2 per cent. would cost the administration a further £731,000 a year. At present, he said, this allowance was costing the railways £23,000,000 a year.

VICTORIA

Day Coaches for "Overland"

Six luxurious day coaches are now being built for Victorian and South Australian Railways joint stock, at Islington railway workshops, South Australia, to match the roomettes and twinettes at present in service on the "Overland." When the modern air-conditioned day cars are completed they will be followed by two more roomettes and twinettes, making a total of six roomettes and six twinettes. The make-up of the new "Overland" will then comprise six sleepers and three day coaches for each train.

Diesel-Electric Maintenance School

Instruction in the mechanical and electrical maintenance of 350-h.p. diesel-electric shunting locomotives is being given to Rolling Stock Branch staff at the North Melbourne Locomotive Depot. The instructor is Mr. W. Reed, a technical officer of the English Electric Co. Ltd., which is supplying the Department with ten of these locomotives.

Railcar Services Praised

The Department's diesel railcar services have received a tribute from the Acting General Manager of Australian National Airways, who told the Minister for Transport that, with the introduction of the 280-h.p. railcar service between Melbourne and Benalla, the company had decided to abandon its air service on this route.

He said that the diesel service was an ideal one for Benalla, and was superior and had more advantages than any air service could give. "We find it difficult to imagine why anybody would consider the use of air transport when this rail service is available," he added.

More Diesel Services

Three more diesel services are in operation. A 280-h.p. diesel railcar is now giving a daily express service each way between Melbourne and Wangaratta, stopping only at Benalla and Euroa, and another 280-h.p. diesel running on the Melbourne-Mansfield line has reduced the time for the journey by half-an-hour. A 153-h.p. diesel provides an improved service on the Melbourne-Wonthaggi line.

There are now five 280 h.p., four 153 h.p., and nine 102 h.p. diesels running on country lines. These extensions of modern railcar service make a substantial improvement to country passenger service, enabling travellers from distant areas to come to Melbourne for a day's business and get back at a reasonable hour.

MEXICO

Hurricane Damage

The hurricane which recently hit three States in the Tampico area caused damage amounting to more than 500,000,000 pesos on the National Railways. Service was interrupted on the San Luis Potosi-Cárdenas-Tampico and Tampico-Monterrey lines. Especially heavy damage was suffered in the Cárdenas-Tampico area, and from Tampico north to Cuidad Victoria.

ARGENTINA

"Postal" Milk Rates

An important and revolutionary development in the railway rates and charges system has recently been introduced in the form of a flat rate of one centavo per km. of milk, irrespective of the distance. This rate includes free return of empty containers. The object to increase the production of milk and its derivatives to alleviate the present acute shortage. It will be recalled that some time ago President Perón forecast the introduction of "post office" rates for railway parcels traffic, but this is the first practical instance of such a step.

Accident on Sarmiento Railway

A serious accident occurred on August 29 involving two passenger trains between Suipacha and M.J. Garcia stations on the D.F. Sarmiento Railway. A train proceeding from Telen (La Pampa) which had stopped between stations because of a fire caused by a hot box was run into by a local from Chivilcoy. Five sleeping cars and the restaurant car of the first train were destroyed by fire; one brakevan was derailed and the other vehicles were damaged by the collision.

Two passengers were killed and 16 others were taken to hospital. The casualties would have been heavier but for the fact that the majority of the passengers on the first train had descended from the train to watch efforts to quench the fire.

CANADA

Transport of Oil

Mr. R. M. Milliken, Divisional Freight Agent for Canadian National Railways, has said in Saskatoon that the C.N.R. plans more vigorous competition with road hauliers for the transport of oil in Saskatchewan and has offered Western oil companies a substantially lower freight rate. It is understood that a spokesman of the road hauliers has announced that if the offer by the railways is accepted, some 1,000 oil lorries will be forced off the roads in Saskatchewan.

Electricity Commission Builds Railway

A 37-mile line connecting Mattawa and Temiskaming and built by the Ontario Hydro Electric Commission to replace a line which will be flooded by the Otto Holden generating station dam across the Ottawa River here at Mattawa, Ontario, has been officially turned over to the Canadian Pacific Railway. The line, the first venture of the Commission in railway construction, was started in November, 1949. It was necessitated by the requirements of the $55,000,000 Holden project which will flood 3,500 acres of land along both banks of the river to form a head pond supplying the station's generating units.

FRANCE

Resistance of Steel Coaches in Accident

The Belgian journal *L'Ossature Métallique* has commented on the excellent behaviour of the steel-bodied coaches in the accident at Brunoy, South Eastern Region, on May 20, 1950, when a special train of twelve coaches and three luggage vans, with Belgian pilgrims, travelling towards Paris, was derailed at 60 m.p.h., due to a wrong signal aspect. The locomotive, luggage van and nine coaches were derailed, but all vehicles except the van remained lined up. Despite the weight of the train, 700 tons, the coaches suffered merely some superficial damage, and only 12 out of 670 passengers were slightly injured. Six of the twelve coaches were slightly damaged at their ends; only one of them showed a slight buckling of the side-sills in the horizontal plane. Only one window was broken. The bodies concerned consisted of semi-tubular mild steel frames with strong buckling resistance.

Air Conditioning of Railway Coaches

A demonstration vehicle specially erected to display equipment

BECAUSE air-conditioned passenger coaches are not in use on British Railways, some difficulty has been experienced by makers of air-conditioning equipment in demonstrating their products to potential purchasers from overseas. To overcome this difficulty, J. Stone & Co. (Deptford) Ltd., the largest producers of equipment of this type outside the U.S.A., has erected a demonstration railway coach to display its plant to representatives of overseas railway administrations and others interested in obtaining air-conditioning equipment.

The design of the coach is not based on any one type, but incorporates a number of the features of passenger carriages to which Stone-Carrier equipment is fitted. Its dimensions are basically those of normal stock with the overall length reduced to 48 ft., and certain other dimensions and features adjusted for demonstration purposes.

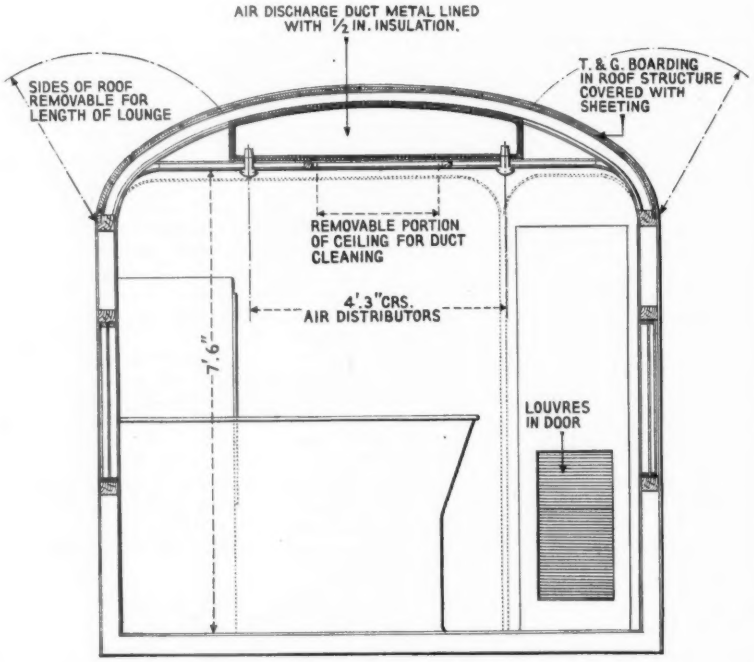
Equipment Included

The equipment includes a complete working installation of the Stone-Carrier air-conditioning system using mechanical refrigeration with effective temperature control with electric air and floor heat. It is also fitted with various items of Stone's electrical equipment for railway carriages and with the Vapor electrically controlled system of steam heating as an alternative to electric heating which, for demonstration purposes, is linked with the air-conditioning control circuits. The body of the coach is fully insulated against heat transfer with a lightweight material; so that visitors can view the equipment beneath the coach, the body has been built up on struts from the underframe.

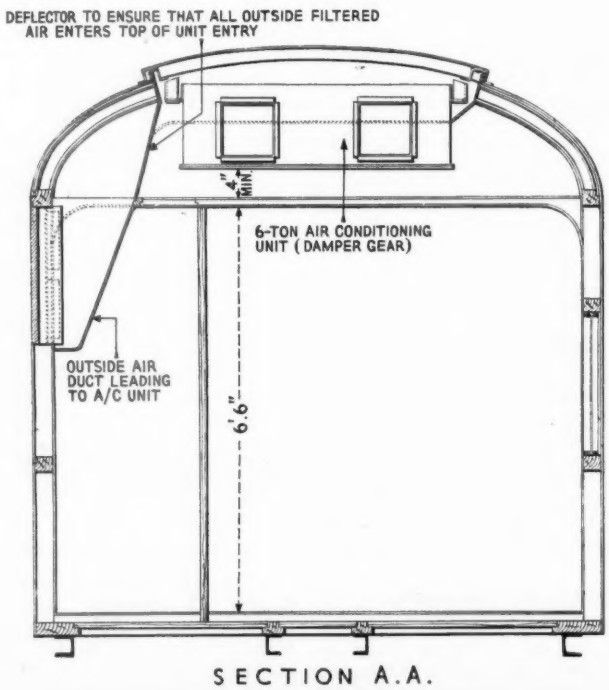
To enable realistic demonstrations to be given, the space surrounding the underframe and body can be conditioned from two built-in air circulating units with steam-heat coils and steam sprays, so that any desired climate can be simulated up to the extreme of 110° F. and 60 per cent. relative humidity. Normally the space is kept at 90° F. and 50 per cent. relative humidity.

The coach has an entrance vestibule above which is the air-conditioning unit with Perspex ceiling panels and a lavatory into which is recessed the main control panel with Perspex door facing into a corridor. Leading off the corridor are three compartments; one is arranged as single width with lower and upper sleeping berths, the next as a double-berth sleeper, and the third as a day compartment. At the end of the corridor is a lounge with a small buffet counter.

The equipment for the supply and storage of power is of the axle-driven

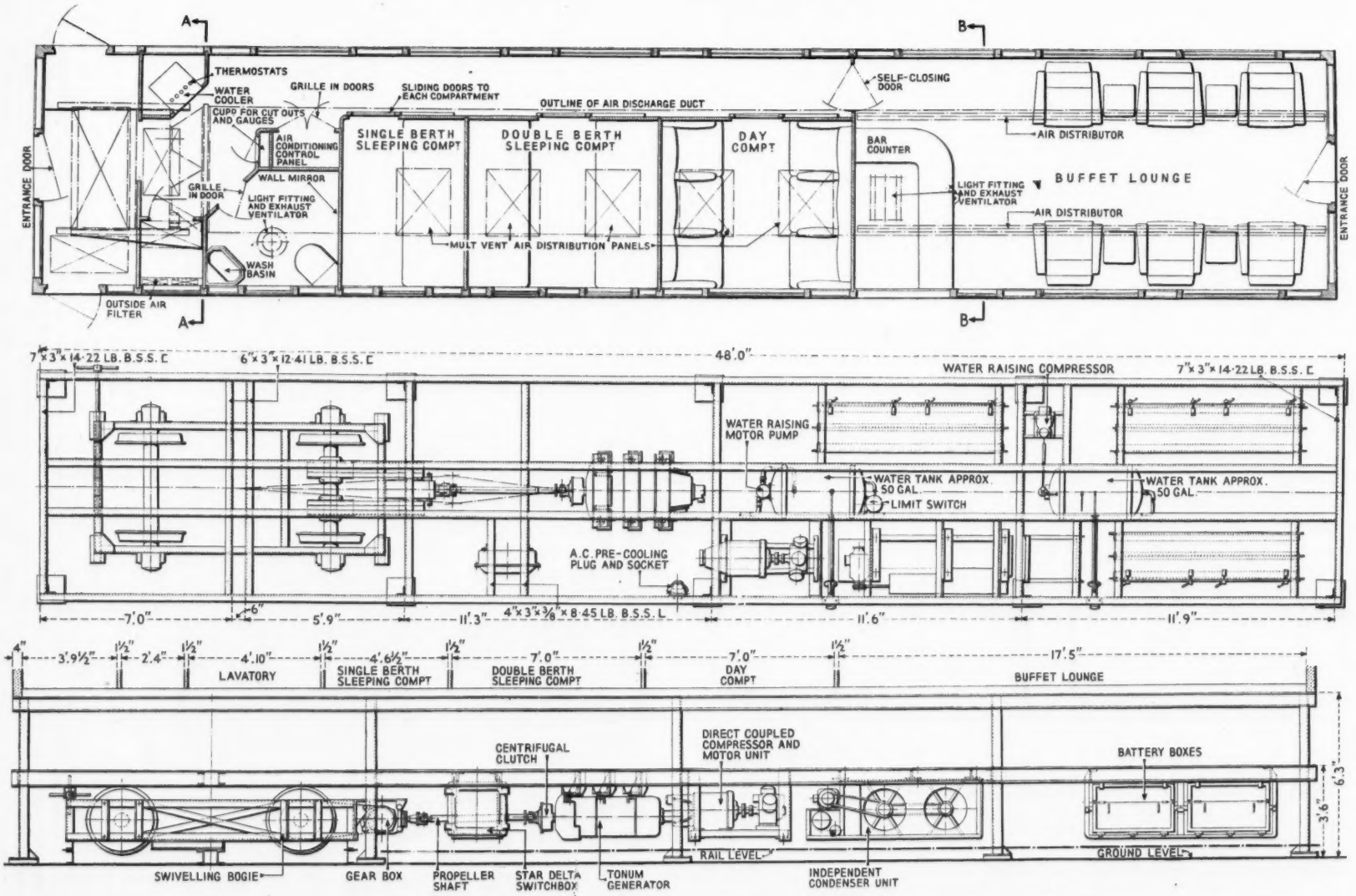


SECTION B.B.

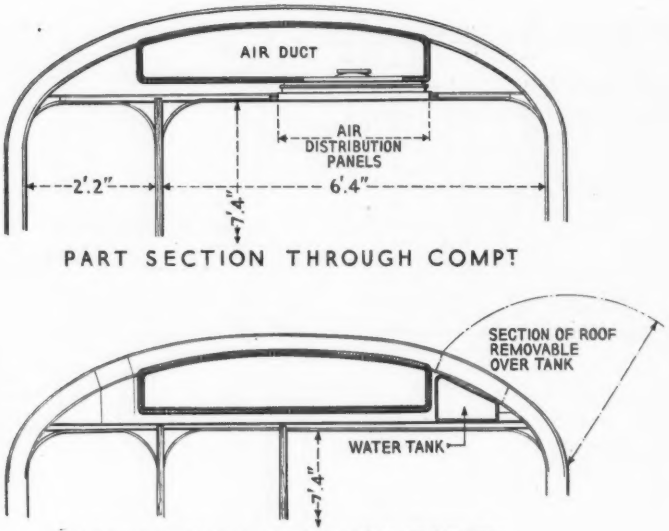


SECTION A.A.

Sectional diagrams showing details of construction of demonstration coach (see also plan drawing on opposite page)



Diagrams showing layout of interior of coach, and arrangement of equipment on elevated underframe



Sectional diagrams of coach roofing

type and is a large-scale development of Stone's well-known axle-driven train-lighting equipment. The components used are:—

An axle drive by belt and gear combination; a genemotor, which is a combined generator and a.c. motor; and the generator controls, all of which operate in conjuntion with lead or nickel batteries according to requirements.

The air-conditioning equipment is of the Stone-Carrier type and comprises:—

Refrigeration—compressor motor and condenser mounted on the underframe and evaporator or air-conditioning unit mounted in the roof of the vehicle.

Air distribution—ducting, outside and return air filters, and discharge fittings are installed and disposed in a manner typical of an actual coach in service.

Air conditioning controls—cooling and heating switchgear. The actual controls are by the Vapor Heating Corporation and embody precision Vapor mercury thermostats of the combined wet and dry bulb type.

In addition, the company has fitted the coach with the following of its specialities:—

Water raising—compressed air system.
Water raising — motor pump system.
Water heating—electric.
Water cooler.
Fluorescent lighting—110 volts d.c.
Toilet indicator.
Embarkation lighting.
Luminous bell indicators.
Berth indicators.
Speedometer—Smith-Stone.

The generator with its driving gear is placed on the underframe, together with the refrigerating compressor unit, condenser, battery boxes, and preconditioning accessories.

Placing of Interior Equipment

The control switchgear is in a cupboard inside the car, the air-conditioning unit is in the roof of the car above the vestibule, and outside air filters are in the side wall, with the return air filters arranged at the end of the corridor in an abnormal position so they can be removed for demonstration of the thermostats, which are placed behind them.

Air is discharged into the three compartments through multi-vent panels giving low velocity flow over a large area and into the saloon through continuous double slots which give a slight perceptible air motion.

The generator provides the power for lighting, battery charging and other services on the car, in addition to that required for ventilation and either cooling or heating. It is a 110/135 volt d.c. machine with a maximum output of 23 kW. and a speed range of 675/850/2,700 r.p.m.

The preconditioning features include an a.c. motor, built as an integral unit with the generator, which has a power of 30 h.p. at 1,450 r.p.m., motor-starting switchgear and power plugs and sockets with swivel carrier. This motor is automatically started, after the mains supply is plugged into the socket on the solebar, and provides all the power necessary for precooling or preheating, lighting, and battery charging; and would normally be used whilst the car is standing at a terminal station.

Temperature conditions within the car are automatically controlled by thermostats. Four selections of temperatures are available for both heating and cooling. When set manually to the desired figure the equipment operates entirely automatically and changes without attention from the operation of heating to cooling according to the prevailing conditions of outside climate and passenger load.

Available Temperature Settings

Temperature settings of 68° F., 66° F., 64° F., and 62° F., dry bulb, are available for heating. Settings of 76° F., 74° F., 72° F., and 70° F. are available for cooling, but these are effective temperatures. In operation each of the cooling settings will control to give a combination of dry-bulb temperature and humidity having the same equivalent sensation of comfort as the dry-bulb temperature at 50 per cent. relative humidity.

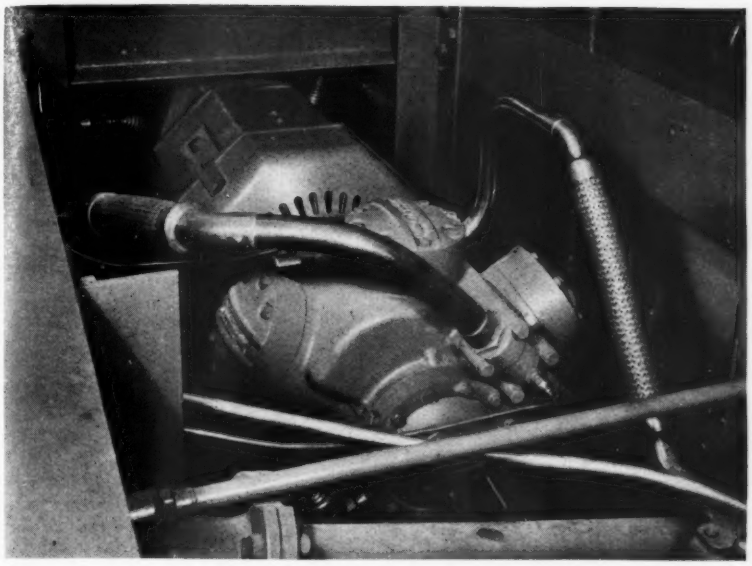
Air cooling and dehumidification is by a mechanical refrigeration system using Freon 12 (Arcton 6) as the refrigerant. The refrigeration compressor is of a design by the Carrier Corporation of Syracuse, U.S.A., now being manufactured at Deptford. It is of high-speed type direct-coupled to an electric motor and has an output of 4·8 tons of refrigeration when running at 1,270 r.p.m. It can be operated at speeds up to 2,200 r.p.m. and is available with 2, 3, 4, or 6 cylinders arranged in either V- or W-formation. It has force, feed lubrication and is fitted with an automatic capacity control which operates according to the refrigeration load requirements and also allows the compressor to start unloaded, relieving the starting torque on the driving motor. A substantially constant suction pressure is maintained by the automatic unloading of cylinders according to requirements.

Air Movement

The movement of the air in the coach is effected by centrifugal fans in the air-conditioning unit which is of 5/6 tons capacity. Outside air is drawn through viscous oiled filters and mixed with a proportion of return air which is also filtered. The mixture is then drawn over the surface of the cooling coil fins of the evaporator, after which it is mixed with a further quantity of return air—if the air-conditioning unit by-pass damper is controlled to a fully- or partially-open position—and then delivered to the air duct from which the air is distributed throughout the car.

Part of the air circulated in the car is allowed to escape to outside atmosphere through exhaust ventilators above the buffet in the saloon and through the lavatory and control panel cupboard. A slight pressure is always maintained within the car, and this tends to prevent the ingress of smoke and dust into the car.

In passing over the cooling fins of the evaporator unit, the air is in intimate contact with a large number of cool surfaces which are at a temperature below that of the dew point of the air. Moisture in the air condenses on these surfaces, thus removing moisture in the air given off by passengers in the car as well as that present in the outside air introduced into the car.



Direct coupled compressor and motor unit

When heating is required, the same air circuit is used; the air passes over the evaporator cooling surfaces which are then inoperative and over a group of electric heating elements which raises the temperature to a controlled level. Under these conditions the by-pass damper is controlled to its closed position. Additional electric heating elements are also arranged throughout the coach situated at low level in the side walls which operate thermostatically in conjunction with the air heaters.

Steam Heating Equipment

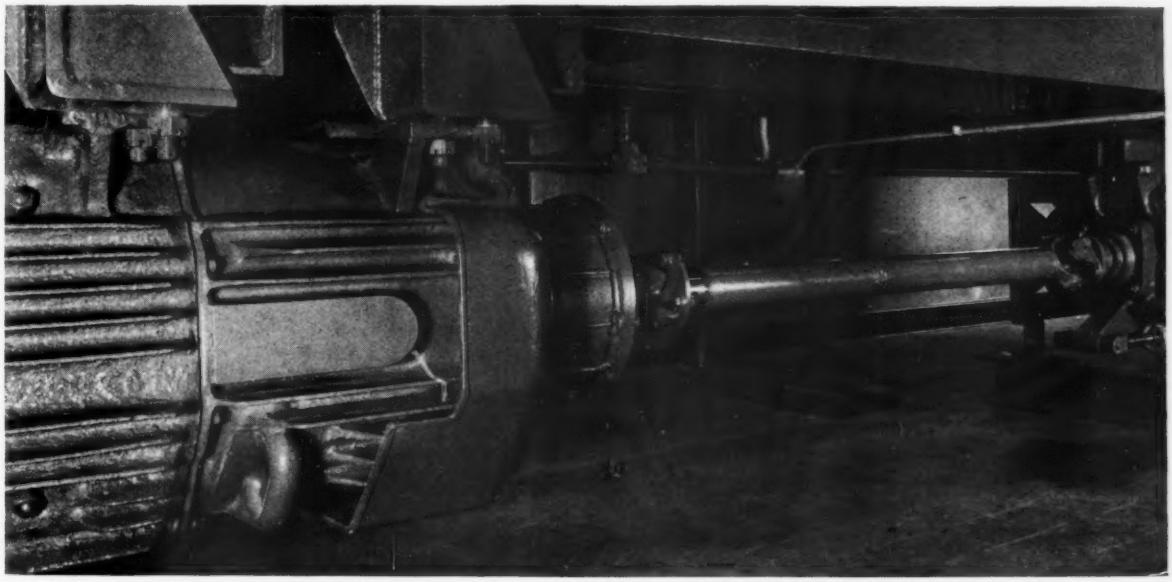
To enable demonstrations to be given to those interested in steam heating, an alternative system supplied by the Vapor Heating Corporation is installed beneath the body with finned steam coil heating elements arranged throughout the coach at floor level. The Vapor temperature control panel installed in the end vestibule can be put into operation by changing over a plug connector allowing it to work in conjunction with the main switchgear panel and the other components.

Temperature Control

The operation of the cooling and heating control switchgear is entirely dependent on the temperature control panel, the relays of which are actuated by thermostats. This panel is in front of the main switchgear panel and is hinged so that easy access is obtainable to the components behind it.

The lower portion of the main panel accommodates the generator contactors with mechanical interlock, voltage and current regulator, cut in relay, selective rectifiers, and fuses. Above the generator panel is the heating and cooling panel with contactors for the compressor motor and for the heating elements, thermal protection for the motor, and fuses. Above the temperature control panel is a lights indicator panel giving visual indication of the operation of the fan, generator, cooling air, and floor heat.

The switchgear for the starting of the a.c. preconditioning motor is in a separate box on the underframe and comprises contactors and relays for Star Delta operation.



Tonum generator being driven by propeller shaft from gearbox mounted below underframe

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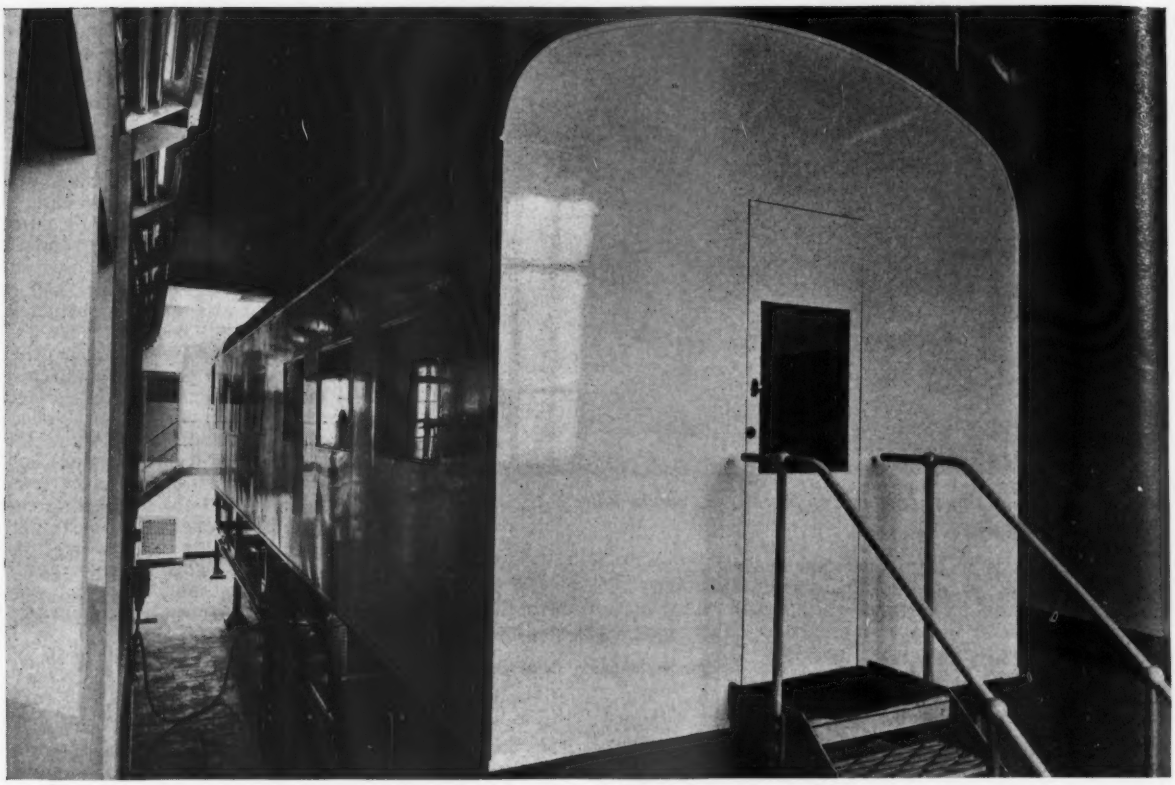
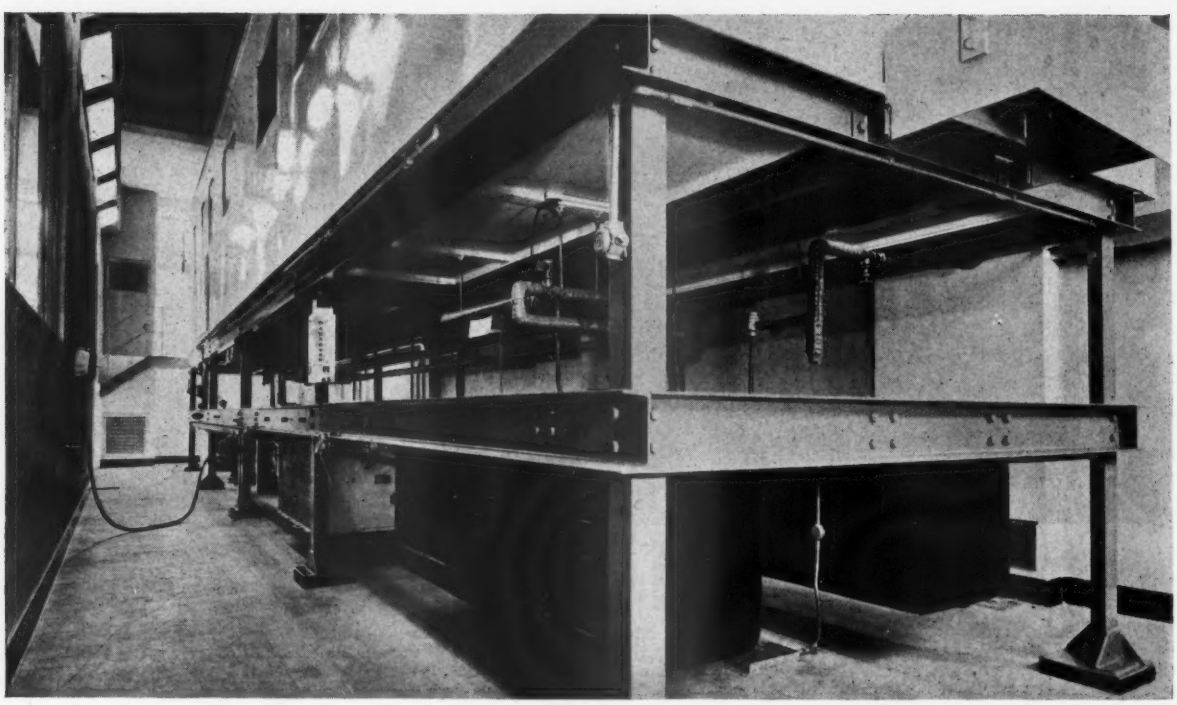
RAILWAY BENEVOLENT INSTITUTION.—The report of the Railway Benevolent Institution for the year to April 30 shows that 6,863 persons were assisted during the twelve months at a cost of £57,094. Aggregate assistance rendered by the Institution now totals approximately £4,040,800. Apart from the Derby Orphanage the income totalled £71,091, as compared with £72,253 for the previous year. There has been an improvement in the financial position of the orphanage, receipts for the period under review being £25,504, against £22,196, while payments show an increase of only £58, which has resulted in a surplus of £1,703, as compared with a deficit of £1,547 last year. Receipts of £1,534 for the twelve months in respect of the Dorking home for railwaymen showed an increase of some £143, and expenses totalled £3,694 or £677 more.

Air Conditioning of Railway Coaches



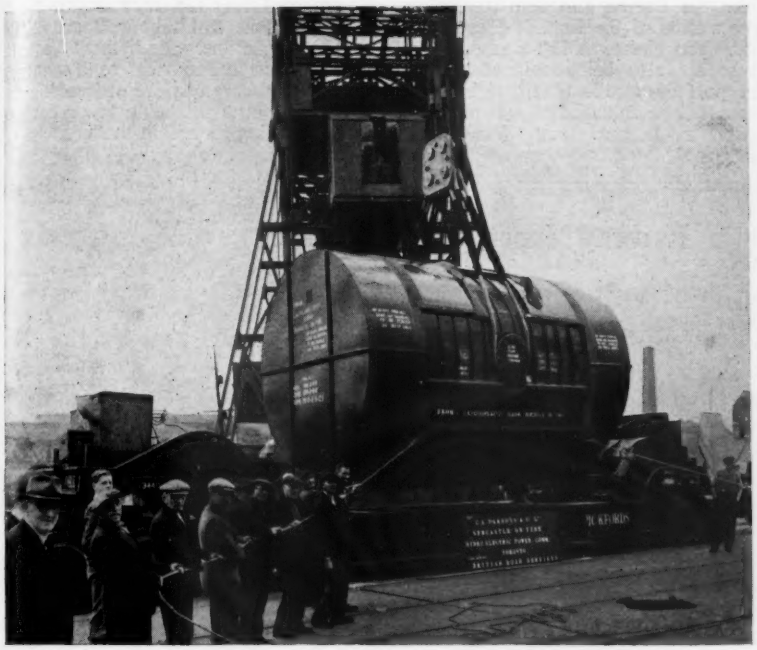
General view of exterior of demonstration coach



View from below coach showing ease with which components mounted on underframe can be inspected

Out-of-Gauge Loads for a Canadian Power Project

Problems involved in transporting a 150-ton stator core from England to Ontario



Lifting a Parsons 150-ton stator core from a British Road Services trailer at Newcastle for loading on to steamer

WHEN the Ontario Hydro Electric Power Commission placed contracts in England for eight complete turbo alternators, involving a weight of approximately 4,000 tons gross, transport managers and carriers alike were confronted with a new set of problems. Now, after much research and forward planning, the heaviest single piece involved in these contracts—a 150-ton stator core—has safely reached its Toronto site after a 3,500-mile journey from the Heaton works of C. A. Parsons & Co. Ltd.

Major Problems

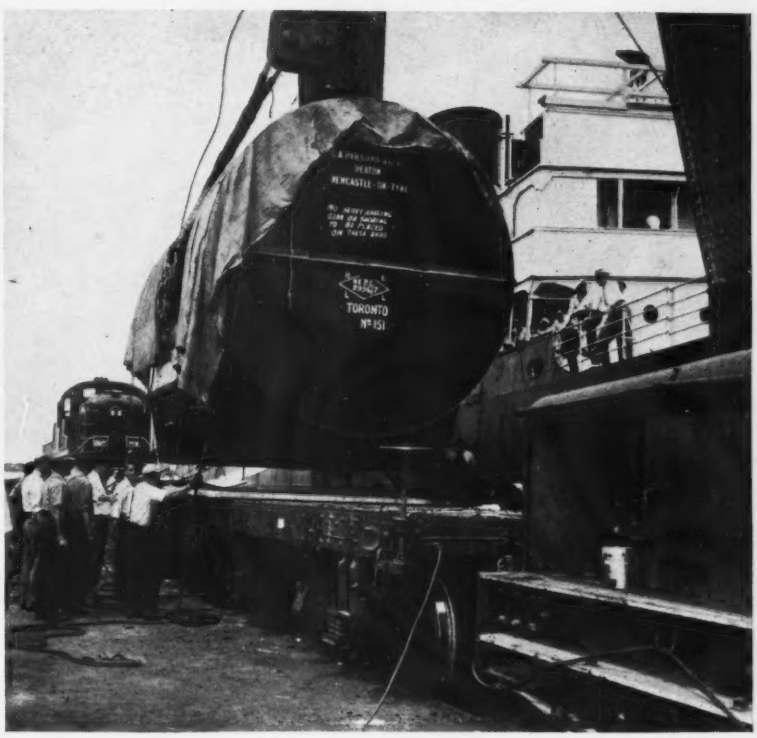
Part of a new power scheme for Ontario, the contracts called for four 100,000-kW. machines to be manufactured by C. A. Parsons & Co. Ltd. for erection at Toronto, and four 60,000-kW. sets for an installation at Windsor, Ontario, the latter to be made at the Stafford works of the English Electric Co. Ltd. From the outset the combination of weight and measurement of some of the pieces involved presented two major problems, first, suitable lifting equipment at Canadian Atlantic ports, and, second, transport from port of discharge to destination.

Each complete Parsons turbo alternator included a giant stator weighing 214 tons which could be broken down into two pieces, the outer stator shell, weighing 64 tons, and a 150-ton inner core. Transport in Canada was undertaken by the Canadian National Railways whose Liverpool office, working in co-operation with their Foreign Freight Department in Montreal and the manufacturers, was eventually successful in overcoming the various difficulties.

Lake Transport

Although the 60-ton Parsons outer shell was well within the Montreal port lifting capacity, its extreme measurements precluded it from road or rail transport in Canada, or even from loading on steamers plying on the Great Lakes. Arrangements were made, therefore, for loading on a lake scow at Montreal, whence the equipment was towed to Toronto. The absence of a crane of required lifting capacity at Toronto then necessitated its being packed on to suitable packing and skidded ashore.

Meanwhile, the 150-ton inner core which had been moved from Newcastle on the same steamer, was receiving different treatment in accordance with the different problems it presented. As its weight greatly exceeded the lifting capacities of any of the larger Canadian Atlantic ports it was decided to unload at the lesser known St. Lawrence port of Sorel, served exclusively by C.N.R.,



Unloading the stator core on to a Canadian National Railways flat wagon at Port Sorel

where Marine Industries Limited own a Sheerlegs crane tested for 150 long tons.

Here, again, measurements provided a difficulty, being in excess of the normal maximum for tunnel and siding clearances, but after investigation the Operating Department of the C.N.R. evolved an out-of-gauge haul by means of which the more narrow rail stretches could be avoided. In advance of the movement, line and bridge conditions had been examined, strengthening being carried out where necessary, and when the heavy piece was eventually loaded direct from steamer hold on to a special flat car, the run to Toronto was carried out safely and without incident.

This 150-ton stator core is the heaviest so far made by C. A. Parsons & Co. Ltd., and it is also believed to be the heaviest single piece ever shipped from the United Kingdom to Canada. The stators of the English Electric Co. Ltd. approximate to 120 tons each, and these are also being shipped through the port of Sorel. In all, eight stator cores will be unloaded at that port, and taken to Toronto and Windsor by Canadian National Railways special train service.

The 150-ton Parsons stator core was loaded on the Tyne in July by the Cairn Line steamer *Cairnvalona* and the first English Electric stator was lifted on board the Cunard steamer *Assyria* in Liverpool during the same month by a Mersey Docks & Harbour Board 200-ton floating crane. Both these vessels sailed direct to Montreal to discharge their general cargo before proceeding to Sorel, their draught being too great to permit coming alongside loaded.

A Mountain Railway Junction in Norway

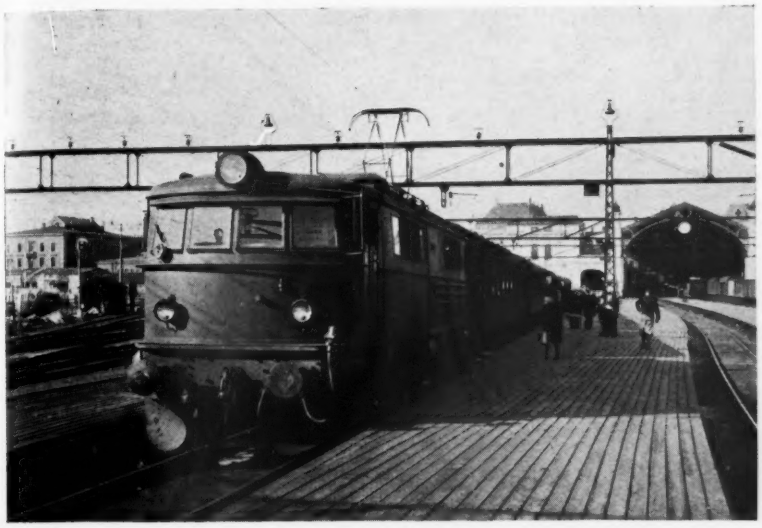
Myrdal Station on the Bergen-Oslo line, Norwegian State Railways, and the junction for the electrified branch to Flam with gradients of 1 in 18 and adhesion-worked

ACCIDENT IN AUSTRIA.—Twenty passengers were killed and at least 40 injured on September 26 when a Vienna-Rome express ran at speed into a goods train at Langenwang, Styria, near the border of the British and Russian zones of Austria. All the dead were stated to be Italian railwaymen returning home. Almost all the coaches were wrecked. An inquiry held at Mürzzuschlag found that the stationmaster at Langenwang, and the express train driver were to blame, the first for allowing the goods train to be shunted in the path of the express, and the second for passing a signal at danger.

BARSI LIGHT RAILWAY CO. LTD.—The report of the Barsi Light Railway Co. Ltd. for the year ended March 31, 1951, shows a decrease in gross earnings of Rs. 28,318. Coaching traffic was up by Rs. 46,011 and freight traffic decreased by Rs. 74,329. Working expenses at Rs. 39,36,861 were higher by Rs. 47,548. Maintenance of structural works included heavy repairs to buildings and to the Man Bridge as well as the renewal of 8 miles of sleepers. From the net earnings of Rs. 7,54,376, there has been set aside Rs. 3,07,620 (£23,071) for Indian taxation, and £1,900 to meet the United Kingdom taxation on profits for the year. With the balance brought forward from last year, there is an available total of £36,013, and after payment of the dividends reported in our September 28 issue, there remains £19,615.

Progress of Electrification in Norway

Oslo-Charlottenberg section is now electrified throughout



Kongsvinger line train in Oslo East Station, Norwegian State Railways

THE electrification of the section of the Norwegian State Railways from Oslo East to Charlottenberg *via* Kongsvinger was completed on June 15, making it possible for the Oslo-Stockholm service to be operated electrically throughout. The changeover to electric traction on the Kongsvinger line marked a great improvement in railway communications between Norway and Sweden, saving an hour on all day and night through trains from Oslo to Stockholm.

The Oslo East-Lilleström section (17 miles) was electrified in 1927. The work of electrifying the Lilleström-Charlottenberg section (71 miles) was begun in the summer of 1949 and has cost Kr. 25,000,000 (about £1,250,000). Some 2,000 wooden masts were erected to carry the overhead on open sections; in addition 300 concrete masts at the intermediate stations were installed.

Cable Laying

Contact leads and power cable were laid by a special train, consisting of a wagon with cable drums mounted in front, followed by a store wagon carrying spare drums. As it is paid out from the cable wagon, the lead passes over a raised boom on the next wagon, to lift it to the requisite height. This is followed by wagons with platforms fixed to the roof, where the cable fixing gang works.

As the train moves from mast to mast the cable leads are connected at approximately the correct interval. The cable is subsequently carefully checked and adjusted from a wagon fitted with a pantograph. Finally a trial run is made at normal speed, to test the entire layout under normal running conditions.

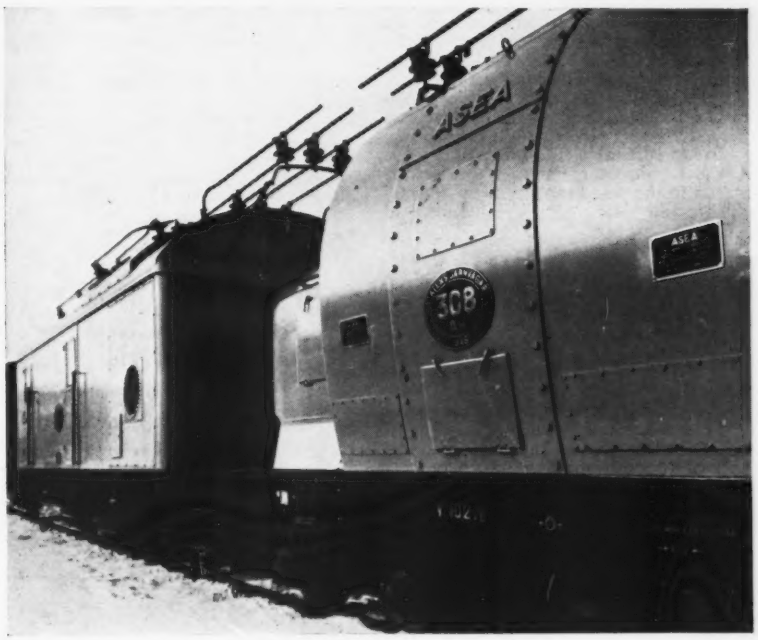
Apart from the work carried out on the actual track, two transformer stations have been built, one at Lilleström and the other at Kongsvinger. At the moment only the Kongsvinger transformer is complete and available for operational purposes; it has two tunnels blasted into the rock, each 45 yd. long, and with a section of 27 ft. by 27 ft.

In addition to the work of electrification, telephone lines have been laid in cables alongside the line, made necessary by the fact that electrical disturbances caused by the traction supply would make normal overhead telephone communications virtually impossible.

Use of Mechanical Digger

The cables are placed from 16 in. to 2 ft. down, and to save time and labour use was made of a mechanical digger lent by the Swedish State Railways. This was the first time a machine of this type was used in Norway for cable-laying, and it proved a great success. When conditions were specially favourable, it dug about five miles of cable-trench in a day, an excellent performance. The Swedish State Railways usually operate the trench-digging machine in conjunction with a cable-laying machine, but this was unfortunately not possible on the Kongsvinger line, as in some places as many as seven cables had to be laid in the same trench.

With the electrification of the Kongsvinger line the Norwegian State Railways now have a total of approximately 640 miles of electrified track, about 23 per cent. of the entire railway network, and about 48 per cent. of the total traffic, in terms of ton-km. All lines are electrified at 15,000 V., 16⅔ cycles,



Mobile transformer, built by Asea

except the section between Narvik and Vassijaure, in the far north, which has 15-cycle supply.

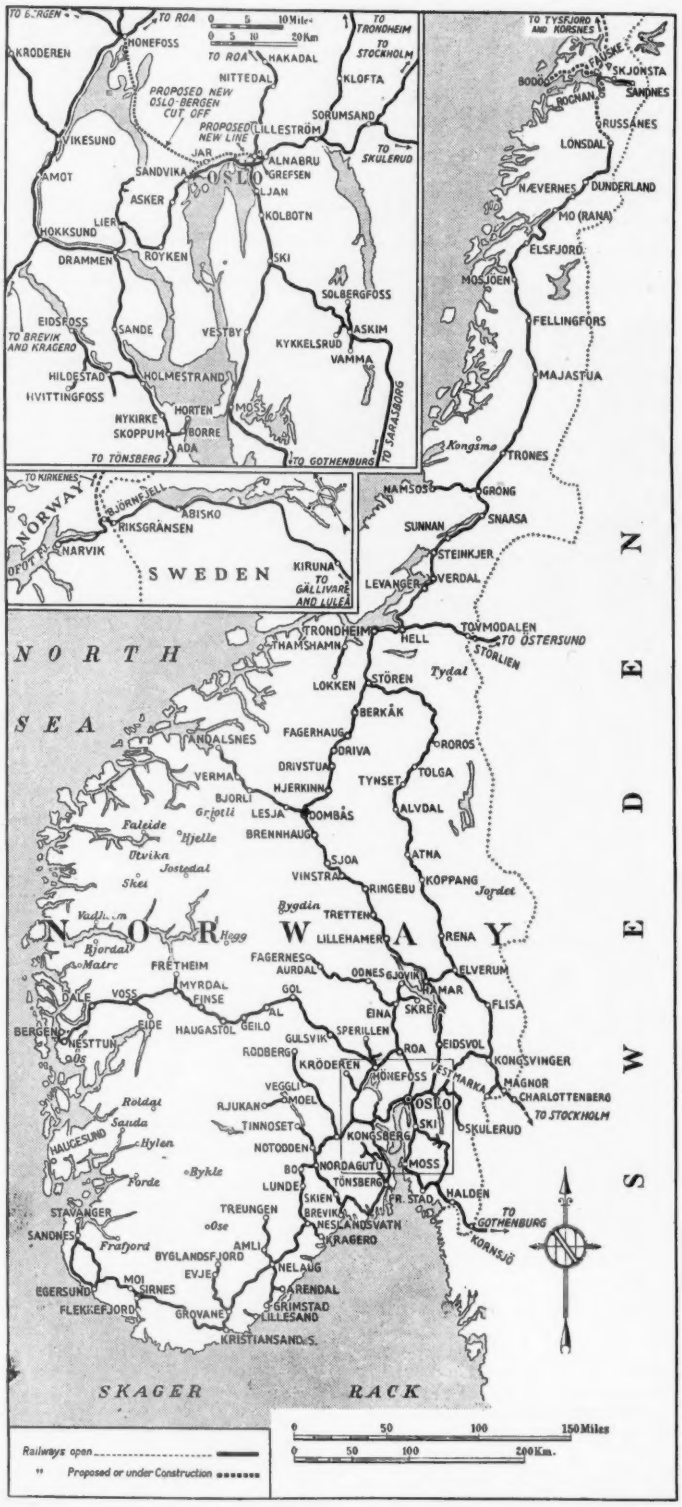
The Norwegian State Railways are unable to exploit the full possibilities of the Lilleström-Charlottenberg line at once, because of a shortage of electric locomotives. It is hoped to take delivery of four or five new electric locomotives and eight or nine electric engines in the course of the year, which should go a long way to making good the deficiencies. The locomotives are the first batch out of a total of 25 electric locomotives now under construction in Norway and being built under Swiss licence.

The development of electrification in Norway was outlined in an article in our August 11, 1950, issue, which contained tables of lines electrified up to 1949 and of lines scheduled in 1945 for electrification.

BRITISH STANDARD FOR FIRE EXTINGUISHERS.—The British Standards Institution has issued a further document (B.S. 1721:1951) in the series of standards covering portable fire extinguishers. This deals with extinguishers of the carbon tetrachloride type. The standard is a revision of B.S.740. Appendices give comprehensive details of fusion and resistance welding. Copies may be obtained from the British Standards Institution, Sales Department, 24, Victoria Street, London, S.W.1, price 4s.

USE OF PINE FOR SLEEPERS.—An acute shortage and high prices of all classes of timber in Australasia has forced railway authorities to seek a substitute for permanent way sleepers. The Governments of Victoria and New Zealand have tested the durability of pressure creosoted pine for use as sleepers, and it is found that after 17 years' service they are still perfect, and compare favourably with untreated jarrah. The Commonwealth and Victorian railways are now seeking supplies of pressure creosoted pine sleepers and are supporting a move to establish a plant near Taurranga, New Zealand. Other railways are showing interest in the pine forests of New Zealand which could yield very large numbers of sleepers each year.

BRITISH STANDARD FOR STEEL TUBES.—The British Standards Institution has published a new standard, B.S.1775:1951, covering steel tubes for mechanical, structural, and general engineering purposes. This is the third of a series for steel tubes for general engineering purposes. The standard covers plain carbon steel tubes not exceeding 16 in. outside diameter. Included are a number of general clauses applicable to all types of tubes, dealing with such matters as material, straightness, lengths, galvanizing, methods of test, and inspection. Each type of tube is then dealt with in detail. At the end of the standard are tables of standard sizes of hot finished welded and hot finished seamless tubes. A further table gives the properties of the tabulated sizes. Copies may be obtained from the British Standards Institution, Sales Department, 24, Victoria Street, London, S.W.1, price 3s.



Map of the railways of Norway with inset showing lines in the immediate neighbourhood of Oslo

RAILWAY NEWS SECTION

PERSONAL

Sir Leslie Boyce, citizen and loriner, was chose . on September 29 as Lord Mayor of London for the civic year beginning on November 9; he will be installed on November 8. He is Chairman & Managing Director of the Gloucester Railway Carriage & Wagon Co. Ltd. and Chairman of Wagon Repairs Limited.

Mr. F. C. Badhwar, Chairman of the Indian Railway Board, who, as head of an Indian Purchasing Mission, has been touring Britain and the European Continent, left this country for India on October 2.

Mr. Robert Widmer has been appointed General Manager of the Montreux-Oberland Bernois Railway, Switzerland. He had formerly been Director of the Aigle-Leysin and Aigle-Sepey-Diablerets Railways, and has been succeeded in this position by Mr. Paul Jotterand.

Dr. H. E. Merritt has resigned his position as Chief Research Officer to the British Transport Commission, to become Chief Administrative Engineer to the Rootes Group at its Coventry motor factories, where he will work jointly with Mr. B. B. Winter, the Director of Engineering.

Mr. F. H. Eliot, Assistant for Outdoor Machinery to the Executive Officer (Electrical Engineering New Works & Development), Railway Executive, has retired.

Mr. Roy C. Mathews, Publicity & Advertising Manager, New Zealand Government Railways, has retired, and has been succeeded by Mr. Harry Maddock, formerly Assistant to Mr. Mathews.

Mr. C. T. Hutson, Assistant Superintendent of the Line, East African Railways & Harbours, who has been on leave in Great Britain, left this country by air for East Africa on September 29.

Mr. A. E. Cook has relinquished his Managing Directorship of Cravens Railway Carriage & Wagon Co. Ltd., but will retain his seat on the board. Mr. J. E. Owston, Deputy Managing Director, has been appointed Managing Director.

Mr. Wilbur E. Lunger has been elected a Vice-President of the American Car & Foundry Company, reporting to Mr. R. W. Ward, Vice-President in charge of production. Mr. Lunger was formerly Assistant Vice-President in the production department.

Mr. W. H. Burton, Stationmaster, Newcastle, North Eastern Region, who, as recorded in our September 14 issue has been appointed Stationmaster, Liverpool Street, Eastern Region, entered the service of the former Great Central Railway in the Audit Office at Marylebone in 1912. He moved to Nottingham in 1917 and after wide experience, was appointed District Inspector, District Superintendent's Office, Manchester, in 1933. He was appointed Stationmaster, Woodhouse, in 1937, Basford & Bulwell, in 1940, and Wakefield Westgate in 1941. He was appointed Yardmaster, Sheffield, in 1942, and subsequently became Stationmaster, Sheffield (Victoria), in 1944, York in September, 1949, and Newcastle in December of the same year.

Mr. A. K. Reid, Secretary of the Tasmanian Transport Commission, who, as recorded in our September 21 issue, has been appointed General Manager of the Tasmania Government Railways, was educated at the Sydney High School and Sydney University, and holds the diploma of Public Administration. He joined the Public Service in New South Wales in 1923, and was attached to the staff of the Industrial Commission until 1930, when he joined the Transport Department. On Mr. M. S. Wilson taking over the position of Commissioner of Transport in Tasmania in 1938, Mr. Reid was appointed Secretary of the newly-created Transport Commission. During the second world war he was detailed for special duty with the Department of War Organisation of Industry, and later with the Commonwealth Land Transport Board, in connection with the organisation of civilian transport in all States. Mr. Reid is Chairman of the Miners' Pensions Board, and a Member of the State Economic Planning Committee. He is a Fellow of the Institute of Public Administration.

Mr. A. K. Reid
Appointed General Manager of the Tasmania Government Railways

Mr. R. A. Emerson has been appointed Chief Engineer, Canadian Pacific Railway, in succession to Mr. John E. Armstrong, who has retired.

Mr. S. R. Sarma, formerly Chief Operating Superintendent of the Madras & Southern Mahratta Railway, has been appointed Chief Operating Superintendent, Southern Railway, India.

We regret to record the death on September 27 of Mr. G. C. Chelioti, a Director of the General Electric Co. Ltd., and a member of the General Council of the Engineering & Allied Employers Federation.

Mr. W. McKie, Assistant Stores Officer, Scottish Region, has been appointed Assistant Stores Superintendent, Eastern & North Eastern Regions.

Mr. N. P. Newman, Managing Director of Newman, Hender & Co. Ltd., has been elected Chairman of the British Valve Manufacturers' Association. He succeeds Mr. E. Bruce Ball, Managing Director of Glenfield & Kennedy Limited, who has held the Chairmanship over the past three years.

Mr. F. R. Mason, who since 1948 has been Principal Representative of the Metropolitan-Vickers Electrical Export Co. Ltd. at Trafford Park, has been appointed a Director of that company.

We regret to record the death of Mr. Walter White, who, until his retirement in March, this year, was General Sales Manager of the Dunlop Rubber Co. Ltd. general goods division at Cambridge Street, Manchester.

The Railway Executive announces the appointment of Mr. J. Kirkby Thomas, Principal, Railway Executive Staff Training Schools, Darlington, to the position of Principal, Railway Executive Staff Training School, Derby, as from October 20.

Southern Region Appointments

The Southern Region announces the following appointments:—

Mr. K. H. Tredinnick, Assistant District Engineer, Cardiff, Western Region, to be Assistant (Permanent Way Maintenance), Waterloo, with effect from October 8.

Mr. J. C. A. Whitworth, Assistant District Operating Superintendent, Chester, Western Region, to be Assistant District Traffic Superintendent, Woking, with effect from October 1.

Mr. P. M. Anderson

Appointed Senior District Engineer, East African Railways & Harbours

Mr. C. S. Longsdale

Appointed District Motive Power Superintendent, Edge Hill, London Midland Region

Mr. Thomas Anderson

Chief Assistant, Litigation & Prosecutions, Scotland, B.T.C. Legal Service, who is retiring

Mr. P. M. Anderson, B.A., A.M.I.C.E., Deputy Resident Engineer on the Northern Rhodesia & Tanganyika survey, East African Railways & Harbours, who has been appointed Senior District Engineer, was educated at Charterhouse, and King's College, Cambridge, and was appointed as Assistant Engineer on the Bengal & North-Western Railway in 1927. In 1931, he transferred to the Sudan Railways as Assistant District Engineer, and in 1937 joined the Engineering Department of the Kenya & Uganda Railways & Harbours. He was promoted to District Engineer in 1948. Mr. Anderson has recently been working as Deputy Resident Engineer on the Northern Rhodesia & Tanganyika survey.

Viscount Portal of Hungerford has been appointed a Director of the British Aluminium Co. Ltd.

Mr. C. K. Bird, Chief Regional Officer, Eastern Region, British Railways, has accepted the Presidency of the Railway Students' Association for 1951-52.

LUNCHEON TO MR. F. C. BADHWAR

The High Commissioner for India gave a luncheon at India House on September 27 in honour of Mr. F. C. Badhwar, Chairman, Indian Railway Board. Among those who accepted invitations were the following:—

Lord Hurcomb, Chairman, British Transport Commission; Mr. F. A. Pope, Member, British Transport Commission; Sir Gilmour Jenkins, Permanent Secretary to the Ministry of Transport; Sir Archibald Rowlands, Ministry of Supply; Sir Percival Leisching, Commonwealth Relations Office; Messrs. E. A. Hitchman, Ministry of Materials; J. B. Figgins, General Secretary, National Union of Railwaymen; J. W. Vaughan, Director, Locomotive Manufacturers' Association; Sir Archibald Boyd, Chairman, Railway Carriage & Wagon Builders' Association; Mr. B. W. C. Cooke, Editor, *The Railway Gazette;* Sir Frederick James, Tates Limited; Messrs. J. C. L. Train, Member, Railway Executive; V. Radford, Chief Financial Officer, Railway Executive; T. M. Herbert, Director of Research, Railway Executive; Frank Roberts, Foreign Office.

India House Messrs. K. N. Kaul, L. R. S. Singh, A. J. Kidwai, K. B. Rao, A. N. Seal, V. N Kohli, K. Ray, W. G. Reid, S. Barber, Dr. R. N. Chaudhuri, Mr. Smith, Mr. Mathur, Mr. Vohra, Mr. Kumar, Mr. Sud.

Mr. C. S. Longsdale, District Motive Power Superintendent, Bescot, London Midland Region, who, as recorded in our September 14 issue, has been appointed District Motive Power Superintendent, Edge Hill, entered the North Staffordshire Railway service at Stoke in 1915, serving an apprenticeship under Mr. J. A. Hookham, then C.M.E. After a course of study in mechanical engineering at the School of Mining & Technology, Stoke-on-Trent, he worked as an Improver in the Motive Power Department. Following amalgamation he was appointed Running Shed Foreman, Brecon, in 1926. In April, 1929, after special instruction in Crewe Works, he was transferred to Holyhead as Assistant Foreman to supervise the maintenance and repair of the Caprotti-valve fitted "Claughtons" then stationed at that depot for the "Irish Mail" working. Subsequently he held appointments as Running Shed Foreman at Warwick, and Speke Junction, and was appointed Assistant District Locomotive Superintendent, Edge Hill, in 1937, and in February, 1946, Assistant in the Office of the Superintendent of Motive Power, Watford. He became District Locomotive Superintendent, Shrewsbury, later in 1946, and was appointed to a similar position at Bescot in 1949.

Mr. R. B. Thomas has been appointed special representative at New York for the Canadian National Railways Department of Research & Development.

We regret to record the death on October 2 of Mr. R. H. Dawson, C.B.E., M.Inst.T., General Manager, Gold Coast Government Railway, 1926-32.

Dr. W. J. Jenkins has been appointed Chairman of the Nobel Division of Imperial Chemical Industries Limited, consequent on the retirement of Dr. J. W. M'David. Other changes in the Nobel Division board are: Dr. James Taylor to be a Joint Managing Director; Dr. David Traill to be Research Manager; Mr. Leonard Gale to be Personnel Director; Mr. O. R. Lineham to be Development Director. Mr. L. Hall, for many years Chief Accountant, has joined the board as Finance Director. Dr. A. G. White recently became a Managing Director.

Mr. Thomas Anderson, Chief Assistant in charge of Litigation & Prosecutions, Scotland, British Transport Commission Legal Service, who is retiring on October 6, entered the service of the North British Railway as a probationer at Granton Passenger Station in 1903. Later in that year he was transferred to the Sack Superintendent's Department as a junior clerk; he became a clerk in the Goods Department, Waverley Station, in 1906, and in a similar capacity entered the Solicitor's Department, under the late Mr. James Watson, two years later. He served with the Armed Forces from 1915-17, and was invalided in September of the latter year on account of wounds. In May, 1920, he qualified as Law Agent, and subsequently obtained varied experience in the Solicitor's Department. On the amalgamation in 1923, he was in charge of workmen's compensation, but a year later he took charge of Sheriff Court and associated work. In 1939, Mr. Anderson took charge of work in Court of Session, and was appointed Acting Solicitor (Scotland), L.N.E.R., in 1943. In 1948 he became Chief Assistant in charge of Litigation & Prosecutions, Scotland, British Transport Commission Legal Service.

The Minister of Transport has formally appointed the Transport Users Consultative Committee for the Yorkshire Area as follows:—

Professor A. N. Shimmin (Chairman), Professor of Economics, Leeds University.

Mr. H. S. Wood, Chairman of Yorkshire (West Riding) National Farmers' Union County Branch.

Mr. H. Bradley, Traffic Manager, Barnsley British Co-operative Society Limited.

Mr. K. Campbell-Cullen, Director of Thos. Cullen & Co. Ltd.; a former Deputy Regional Traffic Commissioner.

Mr. A. B. Shipley, Transport Manager of Steel Peech & Tozer (Branch of the United Steel Companies Limited); member of the Transport Committee of the British Iron & Steel Federation.

Mr. W. Cole, Divisional Transport Officer, North Eastern Division, National Coal Board.

Mr. W. Barr, Secretary, Hull Incorporated Chamber of Commerce & Shipping.

Mr. F. Stott, Regional Officer, National Union of Dyers, Bleachers & Textile Workers.

Mr. E. Robinson, Rural District Councillor.

Councillor H. J. Craven, Member of the West Riding of Yorkshire County Council.

Alderman H. A. B. Gray, Consultant Engineer; Chairman of Huddersfield Passenger Transport Committee for 15 years.

Councillor J. Rafferty, Insurance Agent, Chairman of Leeds Transport Committee for five years.

Councillor S. I. Dyson, Building Trade operative.

Mr. E. W. Arkle, Commercial Superintendent, North Eastern Region, British Railways; representing the British Transport Commission.

Mr. W. M. Hitchcock, Divisional Waterways Officer, North Eastern Division, Docks & Inland Waterways Executive; representing the British Transport Commission.

The Secretary of the Committee is Mr. J. Horsfield, Commercial Superintendent's Office, North Eastern Region, British Railways, York.

Six further members have still to be appointed.

Mr. T. G. Crane has been elected Managing Director of Monsanto Chemicals (Australia) Limited, in place of Dr. James H. Lum, who is returning to the U.S.A. to take up other duties with the Monsanto Chemical Company. Dr. Charles A. Thomas, President of Monsanto Chemical Company, St. Louis, U.S.A., has been elected a Director of Monsanto Chemicals (Australia) Limited, in place of Mr. William M. Rand, who retired recently.

Mr. A. L. Notly, Superintendent (Dining Car Services), South African Railways, has retired.

Mr. W. J. Ruston has been appointed to the board of the Superheater Co. Ltd. in place of Mr. Kenneth Preston, who has resigned. Mr. L. C. Southcott and E. Lawton have been appointed Special Directors.

Mr. M. S. Ahmed has been appointed Acting Divisional Superintendent, Rawalpindi, North Western Railway, Pakistan, in place of Mr. S. B. Azid, who has been appointed to officiate as Director, Civil Engineering, Railway Division, Karachi.

Institute of Transport

On Friday last the retiring President of the Institute of Transport, Mr. J. S. Wills, supported by officers of the Institute and members of the Council, entertained to luncheon editors of the technical press.

The President expressed his thanks to the Press for the interest they had shown in, and the support they had accorded the affairs of the Institute during his year of office. He also introduced Mr. A. B. B. Valentine, President-Elect, and referred to the help he had received from Mr. F. W. Crews, the Secretary of the Institute, and the staff and officers.

Mr. Valentine briefly acknowledged the President's introduction.

Mr. A. E. Sherlock-Mesher, on behalf of the technical press, thanked the President and expressed the good wishes of the press towards the Institute. He felt sure that the good relations so long enjoyed would continue during Mr. Valentine's year of office.

Those present at the luncheon included:—

Messrs. W. A. Babington, *Lloyd's List & Shipping Gazette*; L. M. Bates, *The P.L.A. Monthly*; R. W. Birch, Member of Council; J. W. S. Brancker, Vice-President; G. Cardwell, Member of Council; A. F. R. Carling, Member of Council; Roy Casey, *Flight*; Air Chief Marshal Sir Ralph Cochrane, Member of Council; Messrs. B. W. C. Cooke, *The Railway Gazette*; A. G. Course, Member of Council; H. C. Crane, Member of Council; F. W. Crews, Secretary; H. H. Crow, Member of Council; A. J. Day, *The Syren & Shipping Illustrated*; K. R. Doggett, *The Dock & Harbour Authority*; Michael Donne, *The Financial Times*; Peter Duff, *The Shipping World*; H. J. Ferguson, *Passenger Transport*; James Finlay, *Transport World*; A. G. Griffiths, Assistant Secretary.

Messrs. R. G. Grout, Member of Council; C. F. Haywood, *Motor Transport*; R. G. James, Member of Council; Thurstan James, *The Aeroplane*; C. Hope Johnston, *The Journal of Commerce*; C. F. Klapper, *Modern Transport*; D. R. Lamb, Past President; Sir Lynden Macassey, Past President; Brigadier-General Sir H. Osborne Mance, Immediate Past-President; Messrs. A. G. Marsden, Member of Council; J. S. Nicholl, Past President; S. E. Parkhouse, Member of Council; T. W. Royle, Past President; G. H. Searle, Member of Council; Walter G. Sharp, *The World's Carriers*; A. E. Sherlock-Mesher, *The Commercial Motor*; Gilbert S. Szlumper, Past President; John P. Taylor, *Shipbuilding & Shipping Record*; S. B. Taylor, Member of Council; H. C. Tree, Assistant Secretary; A. B. B. Valentine, President-Elect; Alex. J. Webb, Member of Council; W. H. Wendon, *Fairplay*; J. S. Wills, President.

Northern Ireland Transport Inquiry

The Transport Tribunal for Northern Ireland held the preliminary hearing of its inquiry into transport in Ulster, in Belfast on September 28.

Mr. C. A. Nicholson, for the Ulster Transport Authority, told the tribunal that the Northern Ireland Transport Act of 1948 could not be worked with taxation at its present level. The U.T.A. loss on working for the year was estimated at £400,000 and increases in rates and fares would be made during the coming winter; even so, the loss next year was expected to be still greater. Mr. G. B. Howden, General Manager, Great Northern Railway (Ireland) also announced that his company's rates and fares in Northern Ireland would shortly be raised.

The Ulster Transport Authority, said Mr. Nicholson, welcomed the inquiry as a means of exposing the "very great difficulties it had had to meet." It would place at the disposal of the tribunal its accounts, and offer facilities for inspecting the premises and its operations. It had to provide service in unremunerative areas and to carry what it was asked, whatever the load and time, whereas the private road operator could pick and choose. Nevertheless, but for the "huge burden of taxation"—about £500,000 in road and petrol tax—a different picture would have emerged in the past few years. By closing certain railways in 1949 and 1950, the U.T.A. had saved £240,000.

A new rates and fares structure was to have been submitted by the U.T.A. to the tribunal this autumn; the holding of the present inquiry meant that an interim measure of increases under existing powers could not be delayed. The Authority's accounts for 1951 would be published early next January. As they would provide important evidence for the tribunal, and to allow time for the preparation of the Authority's full case and for that of the cases in reply of other bodies, it was agreed to adjourn the inquiry until a date in January to be fixed.

As given in an editorial note in our September 28 issue, the tribunal is composed of Sir A. B. Babington (Chairman) and Messrs. R. G. Manson and M. P. Sinclair (Members).

Transportation Club Dinner

The monthly dinner of the Transportation Club was held on Friday, September 28. Mr. G. S. Szlumper, the Chairman, presided, and the principal speaker was Sir Ronald W. Matthews who, as Chairman of the former Railway Companies Association, took a leading part in the opening of the original Club in January, 1943, and in its transition to its present form some three years later. There was a large attendance of members and guests. Those present included:—

Messrs. L. B. Alexander, H. H. C. Barton, R. A. Beckett, M. Beevor, P. L. Bell, C. K. Bird, J. D. Black, A. Bonnaffon, V. Bridgen, B. W. C. Cooke, N. E. Crump, S. R. Devlin, G. Dow, B. C. Frost, H. H. Gardiner, D. H. Handover, S. G. Hearn, C. P. Hopkins, S. H. James, R. A. Loraine, S. J. Lott, L. Marshall, J. Montgomery, E. J. Morris, M. Ness, S. Newman, T. W. Royle, P. H. D. Ryder, R. A. Smeddle, C. M. Squarey, B. Stelp, D. Stewart, G. Sutton, J. Vidal, C. C. H. Wade, C. H. Harrilow, R. Waugh, A. J. Webb, W. H. Whelan, D. Woodward.

SCOTTISH REGION TRAIN SERVICES WITHDRAWN.—As from October 1 the passenger train service in the Scottish Region between Perth and Crieff *via* Methven Junction and between Comrie and Balquhidder has been withdrawn. Crieff and Comrie will continue to be served by passenger train *via* Gleneagles. Stations at Lochearnhead, St. Fillans, Dalchonzie, Innerpeffray, Huntingtower Siding, and Ruthven Road Halt have been closed entirely. Bus services are available to places previously served by rail. On the same date the passenger train service were withdrawn from Tochieneal Station on the Portsoy-Buckie line. Alternative rail facilities are available at Cullen Station and a regular bus service operates.

LONGER HOURS WORKED.—Efforts by workers to maintain the value of earnings in the face of an increase in the cost of living are reflected in recent statistics of average earnings and hours. Workers covered by a survey published in the September issue of the *Ministry of Labour Gazette* were those employed last April in manufacturing industries, building, public utilities, communications, industrial sections of national and local government service, and certain sections of road transport. The survey reviews changes in the six months from last October, during which the retail prices index rose by six points after having risen only three during the whole of the previous year. The number of hours worked on the average by adult male employees increased by April to 47·9, the highest figure since the end of the war and higher than that recorded in October, 1938. From April, 1950, to April, 1951, the average hours a week increased by ·9, an advance greater than that recorded in the previous 3½ years. The average weekly earnings of all workers in industries covered reached £6 16s. 2d. by last April as compared with £6 8s. six months before.

British Transport Commission Statistics (Period No. 8)

Summary of the principal statistics for the four-week period ended August 12

STAFF

—	B.T.C. Head Office	British Railways	London Transport	British Road Services (Road Haulage)	Road Passenger (Provincial & Scottish)	Hotels & Catering	Ships & Marine	Inland Waterways	Docks, Harbours, Wharves	Railway Clearing House	Commercial Advertisement	Legal	Films	Total
Number ...	260	600,414	98,754	80,073	61,548	18,879	6,544	4,912	20,075	645	202	296	38	892,640
Inc. or dec.	+1	+662	−205	+87	+174	+83	+51	—	+45	−2	−2	−3	+2	+893

BRITISH TRANSPORT COMMISSION TRAFFIC RECEIPTS

—	Four weeks (Period No. 8)		Aggregate for 32 weeks	
	1951	1950	1951	1950
	£000	£000	£000	£000
British Railways—				
Passengers	13,627	13,006	66,816	67,586
Parcels, etc., by passenger train	2,605	2,421	19,971	18,179
Merchandise	6,463	5,902	58,455	51,092
Minerals	2,462	2,289	21,595	19,324
Coal & coke	5,741	5,203	54,197	45,429
Livestock	87	107	606	735
	30,985	28,928	221,640	202,345
British Railways—				
C. & D. and other road services	826	741	6,334	5,691
Ships and Vessels	1,665	1,526	7,220	6,596
London Transport—				
Railways	1,238	1,076	9,844	8,779
Buses & coaches	2,756	2,464	20,416	19,034
Trams & trolleybuses	726	800	5,999	6,523
	4,720	4,340	36,259	34,336
British Road Services—				
Freight charges, etc.	5,397	4,473	45,914	36,277
Road Passenger Transport	4,504	3,916	26,204	23,394
Docks, Harbours & Wharves ...	1,152	917	8,170	7,146
Inland Waterways	134	118	1,071	962
Hotels & Catering	1,468	1,276	9,772	8,786

LONDON TRANSPORT

—	Passenger journeys	Inc. or dec. per cent. over 1950	Car miles	Inc. or dec. per cent. over 1950
	000		000	
Railways	46,125	+ 0·7	17,748	+ 0·3
Buses & coaches	229,219	+ 7·8	26,477	+ 7·4
Trams & trolleybuses	72,181	−16·9	7,385	−13·4
Total	347,525	+ 0·6	51,610	+ 1·5

INLAND WATERWAYS

Tonnage of traffic and ton-miles

—	Tonnage	Inc. or dec. per cent. over 1950	Ton miles	Inc. or dec. per cent. over 1950
	000		000	
Coal, coke, patent fuel & peat	371	− 5·7	5,594	+ 2·0
Liquids in bulk	157	+17·2	4,113	+16·8
General merchandise	318	+13·2	4,623	− 1·9
Total	846	+ 4·7	14,330	+ 4·4

BRITISH RAILWAYS

Rolling Stock Position

—	Operating stock	Number under repair	Available operating stock	Serviceable stock in 1950
Locomotives	19,345	3,257	15,694	15,960
Coaching vehicles	57,744	4,607	53,137	52,770
Freight wagons...	1,109,800	97,397	1,012,403	990,559

BRITISH RAILWAYS

Passenger Journeys (Month of June, 1951)

Full fares	Monthly returns	Excursions, cheap day, etc.	Other descriptions	Workmen	Season tickets	Total	Inc. or dec. per cent. over 1950
6,489,000	11,377,000	24,003,000	5,129,000	18,114,000	17,059,000	82,171,000	+3·3

BRITISH RAILWAYS

Freight Tonnage Originating and Estimated Ton-Miles (Period No. 8)

—	Minerals	Merchandise	Coal & coke	Livestock	Total	Inc. or dec. per cent. over 1950
	000	000	000	000	000	
Tons originating ...	4,198	3,457	10,411	58	18,124	+0·2
Ton-miles	349,050	454,187*	678,288	—	1,481,525	+3·5

* Includes livestock

BRITISH RAILWAYS (Period No. 8)

—	Total steam coaching train-miles	Total electric coaching train-miles	Total freight train-miles	Freight train-miles per train engine-hour	Net ton-miles per total engine-hour	Locomotive coal consumption	
						Total tons	Lb. per engine-mile
1951	16,712,000	3,869,000	9,766,000	8·8	569	993,000	58·3
1950	16,940,000	3,844,000	9,853,000	8·9	547	1,000,000	58·0

East Indian Railway Annual Dinner

Progress in the rehabilitation and consolidation of the railway

The 48th annual dinner of the East Indian Railway Officer's Association was held at the Connaught Rooms, London, on September 26, Mr. O. R. Tucker, a former Chief Mechanical Engineer, presiding. The following were present and comprised 53 members of the Association and 13 guests:—

Members: Messrs. H. J. Allinson ; F. C. Badhwar, Chairman, Indian Railway Board ; J. A. Bell ; C. N. Burns ; R. Bonar ; Sir George Colvin; Messrs S. J. P. Cambridge ; C. A. Crawford ; A. J. Doran ; H. G. Emmerson ; R. J. Earle ; J. M. Fenton ; E. R. Fleeton ; Brigadier R. Gardiner ; Messrs. R. H. Goodman ; J. C. Gibson ; A. R. Gundry ; Sir Hugh Hannay ; Mr. P. Hackforth ; Dr. F. G. Harman Brown ; Messrs. J. H. Harman ; R. G. Hughff ; J. R. Hemsley ; G. R. G. Huddleston ; H. Howe ; D. W. Hayden ; D. H. Hughes ; C. G. B. Hinchey ; E. H. N. Lowther ; G. T. Lemon ; Sir Robert Marriott ; Messrs. F. G. S. Martin ; J. A. Morris ; A. I. Macmillan ; T. S. R. Mills ; R. Oakley ; H. Oakley ; E. N. Padwick ; H. W. Puttick ; G. W. N. Rose ; B. G. Smith ; A. G. Stavridi ; R. A. Saunders-Jacobs ; K. Swarup ; B. Severs ; G. A. R. Trimming ; O. R. Tucker ; L. D. J. Turnbull ; D. F. Tawse ; A. V. Venables ; R. M. Watson ; H. C. Wallace ; W. W. Whitney.

Guests: Messrs. W. H. Denby ; Lt.-Colonel H. E. Edwards ; Mr. A. W. Goldsack ; Sir Maurice Hallett ; Messrs. G. A. Haig ; B. Lawrence ; H. Mathews ; F. A. Pope ; R. R. Parker ; Sir William Stanier ; Mr. J. V. Severs ; Group-Captain Jaswant Singh.

In proposing the toast of the evening, the East Indian Railway, the Chairman first expressed his thanks to the permanent committee of the Association for inviting him to take the chair, an honour which he greatly appreciated. He had received a letter from Mr. K. B. Mathur, General Manager, E.I.R., wishing the Association every success.

The process of rehabilitation and consolidation of the railway, said Mr. Tucker, had continued during 1950-51. Complete stoppage of trade with Pakistan, however, had led to some setback, while the large influx of refugees from East Pakistan had placed a severe strain on the resources of the railway. With the revival of trade relations by the signing of the Indo-Pakistan trade pact in February this year the normal position between the two countries had been restored.

Despite this disturbing feature, passenger-miles in 1950-51 registered an increase, and had reached 8,545 million compared with the figure of 8,314 in the previous year. Goods traffic had also registered an increase, being 8,694·8 million ton-miles against 8,541 during the previous year; the overall passenger train punctuality was 80·1 per cent.

The locomotive position at the end of the last financial year showed an increase of 16, and the addition of new engines had greatly relieved the railways maintenance problems, and had resulted in better usage; it was also proposed to extend the pooling of engines. Uneconomic engines were also being withdrawn from service. Condemnation of older types of passenger vehicles had been approximately balanced by replacement of new stock; 103 all-steel third class carriages of modern design, equipped with electric fans, had been placed in service. These were being used on important trunk lines and had helped greatly to improve the standard of amenities for long-distance passengers; there were some 2,000 fewer wagons, in terms of 4-wheel wagons, compared with the previous year, due to the condemnation of old and uneconomical wagons.

Passenger and Staff Amenities

Amenities for passengers and staff had also received increased attention. In conformity with the policy of the Government, electric fans were being gradually installed in third class and inter-class carriages, and 1,217 electric fans have been installed on station platforms and third class waiting rooms. Additional overbridges and commodious waiting rooms had been erected, together with improved facilities for supplying food to travelling passengers. Further improvements in this direction are envisaged.

Sir Hugh Hannay proposed the toast of the guests, and Sir Maurice Hallett, replying, said that he greatly appreciated the invitation to attend. He had often enjoyed the hospitality of East Indian Railway officers and the dinner had given him an opportunity to renew old friendships. He was very pleased to see Mr. Bhadwar, and congratulated him on the high position he had attained as Chairman of the Railway Board and wished him every success.

Mr. Badhwar, replying, said he appreciated the good wishes of Sir Maurice Hallett, whom he had known for many years. Referring to the present position on the Indian Railways, Mr. Badhwar said that the results obtained during the last six months showed a steady improvement over the previous period. The railways were better equipped, and old locomotives were being replaced by others of increased power. Considerable attention was being paid to providing amenities to passengers and staff. The food situation had thrown an increased amount of work on to the railways. Referring to the new grouping system of Indian railways, he said that, while one could not say what the future held, former traditions would serve as an example to the younger generation of Indian railwaymen.

Mr. S. J. P. Cambridge proposed the health of the Honorary Secretary, and said that they were all indebted to him for the arrangements made.

Mr. Lowther, replying, said that thanks were due to Sir Robert Marriott, Chairman of the Committee, from whom he had received every assistance.

The next dinner will be held during September, 1952, when the Chairman will be Mr. G. A. R. Trimming, formerly Chief Mechanical Engineer, E.I.R.

New London Transport Green Line Coach

First in service of vehicles to replace present single-deck bus and coach fleet

As part of a post-war plan of the London Transport Executive to replace its entire single-deck fleet, the first of 263 new Green Line coaches went into service on October 1, on route 704 between Windsor and Tunbridge Wells.

The new vehicle, of the RF class, has a 7 ft. 6 in. wide full-fronted MCW all-metal body on an A.E.C. Regal Mk. IV underfloor-engine chassis. In design and construction it is similar to the RF class sightseeing coaches, put into service earlier this year, except that full advantage has been taken of recent legislation to put 30 ft. long bodies on two-axle chassis.

In general, the chassis arrangement basically resembles that of the TF coach, with which London Transport pioneered in this country the underfloor engine in 1937. The emphasis in its design has been on ease of maintenance; standard RT class components have been incorporated as far as practicable so that the majority of working parts in the transmission and axles are interchangeable with those of the RT class, thus facilitating servicing and keeping the range of spares to a minimum. RT class practice is also followed in a 14 ft. 4 in. wheelbase, size of engine (9.6 litre and 125 b.h.p.) and the adoption of fluid flywheel, four-speed air-actuated Wilson pre-selective gearbox with steering column control, and compressed air braking.

The flat engine has dry-sump lubrication and pilot injection to minimise diesel knock. It is on anti-vibration mountings and a built-in jacking system has been installed for speedy removal—this consists of a length of chain attached to the engine at the point of balance and to a nut that

Green Line coach with underfloor engine, London Transport Executive

travels along a screw which can be turned by the wheel-nut spanner. In addition, the fuel pump, injectors, and cylinder heads have been made exceptionally accessible. A clean air supply for the engine is ensured by the location of the air intake above the driver's head, whence it proceeds by a pipe-line to the engine.

The radiator is under the floor forward of the front axle, and air circulation is increased by an engine-driven fan. The filler cap, at convenient height at the front of the body, is concealed by a hinged bar-and-circle motif, bearing the words "Green Line." In layout and appearance, the all-metal body, of the stressed inner-skin type, follows the lines of the 5Q5 introduced in 1936, but presents a modern styling.

The platform is enclosed by Peters air-worked glider doors fitted with glass panels. The driver is isolated from the platform by a waist-high door and from the saloon by a full-length partition. Refinement for the driver include a cab heater and a windshield adjustable to any desired position, with a de-mister for adverse weather conditions. Two windshield wipers are fitted.

Seating Arrangement

The 39 seats are arranged in 19 pairs facing forwards with a single seat, facing the nearside, immediately behind the driving position. Tubular frames are provided, with polished top and grab rails and quickly-detachable Dunlopillo cushion and squab units. A new design of moquette brightens the interior of the coach, which is finished in conventional Green Line livery.

Seven windows each side provide ample natural lighting. All windows are glazed in rubber and have rounded corners, and four on each side are of the shallow half-drop type operated by a winding handle. Thirty 12-W. pearl lamps, with concealed fittings, well spaced out along the underside of the ample luggage racks, down the centre of the ceiling and on the rear bulkhead, give the widest diffusion of artificial lighting. Ash trays are provided for each seat. The interior of the coach is warmed by a Clayton-Dewandre heater which circulates air through a duct along the nearside.

Bulk Conveyance of Cement Traffic

Saving in manpower and handling costs by the use of cylindrical containers

For some time the North Eastern Region of British Railways has been experimenting with means of extending the conveyance of traffics in bulk. Cement in particular lends itself to this method, largely due to the high cost of paper bags, and to the shortage of paper. There is also scope for saving in manpower and handling costs, and elimination of damage by wet.

Several months ago the possibility arose of conveying 40,000 tons of cement in bulk from the Ferriby works of G. & T. Earle Limited, Hull, for use in the construction of a new reservoir for the Wakefield Corporation at Baitings, near Sowerby Bridge, in the West Riding. Therefore experiments were made with the use of containers to convey this traffic. Although an improved design of standard bulk container is in production for general use throughout British Railways it was decided that until these standard units became available early in 1952 it would be feasible to use a cylindrical type of container.

This type of container, numbers of which are now on hire to British Railways from the Ministry of Supply, was designed for use during the recent war for conveyance of magnesium oxide, and subsequent experiments have shown that it is also particularly suitable for cement. Each unit is 8 ft. high × 6 ft. 6¼ in. dia. There is a circular opening at the top for filling and this is covered by a screw-down weatherproof cover. The inside of the containers tapers towards the bottom to a circular discharge outlet controlled by a hinged door fitted with simple hand-operated mechanism. The outside of the unit gives a circular base the full diameter of the cylinder with an opening through which the control mechanism is operated.

The tare weight of each unit is 15 cwt. and the capacity 160 cu. ft. Although it would be possible to accommodate almost 6 tons of cement the load has been restricted to 5½ tons. Four lifting lugs are welded to the top edge so that transfer from wagon to motor is simple and quick. Two of these containers are carried in a standard 13-ton wagon.

The total tonnage despatched so far from Ferriby to Sowerby Bridge amounts to 900 tons and as work on the reservoir progresses the number of containers handled daily will increase. Simplicity of construction makes their loading at Ferriby easy; the cement passes down a canvas chute leading through the lid.

No difficulties have arisen with unloading the containers by crane at Sowerby Bridge Station or in opening the bottom doors to discharge direct into the cement storage hopper at the reservoir site. The containers are carried between Sowerby Bridge and the site by British Railways road motor vehicles and unloading is by a two-way travelling hoist block which spans both the roadway and the hopper grating.

Cylindrical containers in use in the North Eastern Region

SCOTTISH REGION BRANCH LINE CLOSED.—As from October 1, the passenger train service on the Montrose-Inverbervie branch line in the Scottish Region has been withdrawn, stations affected being North Water Bridge Halt, St. Cyrus, Lauriston, Johnshaven, Gourdon, and Inverbervie. A bus service is available to and from Montrose. The stations are continuing to deal with passenger train parcels and miscellaneous traffic, and there is no change in the freight train traffic arrangements.

COAL SHIPPING STAITHS ON THE TYNE.—Two new coal shipping staiths are to be built by the Tyne Improvement Commissioners at Whitehall Point to accommodate vessels drawing up to 30 ft. They will provide the most up-to-date facilities for the shipment of coal from collieries in south Northumberland. Each staith will be equipped with two radial arm loaders enabling two holds of a vessel to be filled simultaneously, and wagon tipplers will be provided to enable washed small coal to be rapidly shipped. Additional standage sidings for wagons are also to be constructed. The cost of the work is estimated at £600,000. Consent of the Treasury and Ministry of Transport is necessary before the work can commence.

FESTIVAL OF BRITAIN AND THE TOURIST TRADE.—It is estimated by the British Travel & Holidays Association that by the time the Festival of Britain closed on September 30 at least 450,000 overseas visitors had been to the South Bank site and to Battersea. The American total is put at more than 90,000. Latest statistics show that a late travel boom has brought a record number of visitors during recent months. Sir Alexander Maxwell, Chairman of the Association, states that on the evidence of figures at present available, it seems reasonable to expect that the target of 700,000 visitors for the year will be reached.

European Timetable & Through Carriage Conference

Framing schedules for through services on the Continent next summer

Messrs. W. Tribelhorn, P. Kradolfer, N. Langhelle (speaking), and H. E. Stokke at the opening ceremony

The European Timetable & Through Carriage Conference, which opened in Oslo on September 26, and is due to end tomorrow, October 6, is under the presidency of Mr. P. Kradolfer, General Manager, Working & Construction, Swiss Federal Railways. The 180 delegates from 23 countries were welcomed by Mr. Nils Langhelle, Norwegian Minister of Communications, who wished success to the conference.

The plenary session, which was held on October 3, covered eleven subjects general in scope, five relating to timetables and six to through coaches; at meetings of the committees 250 questions have been discussed.

The delegates have included the following:—

Great Britain: Messrs. R. H. Hacker, Chief Officer (Continental), Railway Executive; L. H. K. Neil, Continental Traffic Manager, Eastern and North Eastern Regions; S. W. Smart, Superintendent of Operation, and R. E. Sinfield, Continental Superintendent, Southern Region, British Railways.

Austria: Dr. Bruno Kepnik, Operating Manager, Federal Railways.

Belgium: M. Vanderborght, Directeur de l'exploitation, S.N.C.B.

Czechoslovakia: M. Karel Vesely, State Railways.

Denmark: Messrs. Terkelsen, General Manager, and Johnsen, Traffic Manager, State Railways.

Finland: M. Jalmari, Assistant Operating Manager, State Railways.

France: MM. Dorges, Secrétaire Générale, Ministere des Travaux Publics; Dargeou, Directeur, Service Central du Mouvement, and Marois, Directeur, Service Commercial, S.N.C.F.

Greece: M. Zoumboulis, Traffic Manager, State Railways.

Hungary: M. Arato, Manager, State Railways.

Italy: Dr. Sottile, Operating Department, and Dr. Laloni, Commercial Department, State Railways.

Jugoslavia: M. Iljadica, State Railways.

Luxembourg: M. Conter, National Railways.

Netherlands: Dr. D. J. Wansink, General Maganer, and Mr. W. R. Blankert, Chief of Operating Department, Netherlands Railways.

Norway: Messrs. H. E. Stokke, General Manager, and O. Holtmon, Traffic Manager, State Railways.

Poland: M. Buffi, Assistant Operating Manager, State Railways.

Saar: Herr Joseph Werner, Director, Saar Railways.

Spain: Don Alfredo Uribe, Assistant Manager, R.E.N.F.E.

Sweden: Mr. Erik Upmark, General Manager, State Railways.

Switzerland: M. Tribelhorn, Chief of Operating Department, Federal Railways; M. Grimm, Manager, Bern-Lotschberg-Simplon Railway; and Dr. Buchli, Manager, Rhaetian Railway.

Turkey: M. Uner Zihni, General Manager, State Railways.

U.S.S.R.: M. Sujasov, Manager, U.S.S.R. Railways.

Western Germany: Herr Mangold, Ministerialdirektor; Herr Mundemann, Reichsbahndirektor, Frankfort (Main); and Herr Schrenk, Reichsbahndirektor, Stuttgart.

Cie. Internationale des Wagons-Lits: MM. R. Margot-Noblemaire, Administrateur-Directeur Général, and A. Widhoff, Directeur Géneral adjoint.

Staff & Labour Matters

Railway Shopmen

The claim for a substantial increase in pay for Railway Shopmen was discussed at a meeting of the Railway Shopmen's National Council on September 25, when the employers' side indicated that their reply would be given later.

Shipbuilding Employees

Representatives of the C.S.E.U. on September 25 submitted a claim to the Shipbuilding Employers' Federation for £1 a week increase for shipbuilding and ship-repairing workers. The employers' reply is to be given after the Federation has consulted its constituent associations. The Confederation claim that all merit craft rates and district differentials should be maintained. It is also understood that the employers undertook to reconsider the question of a second week's paid holiday.

Dublin Port Strike

After accepting the Maritime Board compromise proposals for settlement of the dispute regarding basic pay and overtime rates, Dublin port workers, who had been on strike since August 31, returned to work on September 27. British Railways Holyhead-Dun Laoghaire service was not affected by the strike. At the time of going to press, some recurrence of trouble was reported, 1,000 dockers having again struck.

Contracts & Tenders

The South African Railways have recently placed a contract with the North British Locomotive Co. Ltd. for 60 "25" class 4-8-4 locomotives.

Hindustan Aircraft Limited, Bangalore, India, which has under construction an order for 150 all-steel third class railway coaches for the Indian Railway Board, has recently received a further order from the Railway Board for 150 coaches of the same type.

The Canadian Pacific Railway has recently placed orders amounting to $50,000,000 for new equipment. The orders placed were for 50 diesel-electric locomotives, 4,250 freight vehicles, and 50 refrigerator and baggage & express vans.

Of the diesel locomotives, 38 will be used to complete the dieselisation of the freight and passenger service between Calgary and Revelstoke, over the steepest grades of the Rocky Mountains; there are already 28 diesels on order for this territory. The new freight vehicles will include:—

2,550	50-ton box cars
300	50-ton motorcar wagons
100	70-ton flat wagons
300	70-ton longitudinal hopper wagons
300	70-ton drop-end gondola cars
400	50-ton freight refrigerator vans
300	70-ton covered hopper wagons

The Crown Agents for the Colonies have recently placed a contract with Cravens Railway Carriage & Wagon Co. Ltd. for 38 four-wheel cattle wagons for the East African Railways & Harbours, Kenya & Uganda section.

The 22 diesel railcars which, as recorded in our September 14 issue, have been ordered from Cravens Railway Carriage & Wagon Co. Ltd. by the Western Australian Government Railways, will be of the following types:—

Ten suburban railcars
Two country railcars
Ten combined freight and passenger railcars (six of which are to be supplied as steel body shells only, complete with bogies)

Transport Equipment (Thornycroft) Limited has announced that an order for 33 petrol-engine Trusty four-wheel heavy duty tractors has been received from the South African Railways Road Motor Services by the local Thornycroft agents, Robertson & Moss Limited, Johannesburg. These vehicles will be required, among other duties, to haul trailers of 35-tons capacity. The units are fitted with a

heavy-duty engine developing 128 b.h.p. at 2,300 r.p.m.

Added to the previous order for 210 Thornycroft haulage units for goods and dual-purpose needs, this recent order brings the total of vehicles ordered from Thornycrofts by the South African Railways this year to 243.

The Board of Trade, Commercial Relations & Exports Department, Special Register Information Service, recently stated that the United Kingdom Trade Commissioner at Melbourne has reported that the State Electricity Commission of Victoria has issued a call for tenders (No. 51-52/82) for control equipment for 1,100-volt d.c. locomotives. Tenders should reach the Secretary of the State Electricity Commission of Victoria, 22-32, William Street, Melbourne, before 11 a.m. on Wednesday, November 28.

A copy of the specification is available for inspection by representatives of United Kingdom manufacturers at the Board of Trade, London, S.W.1, Additional copies of the tender can be obtained from the London office of the State Electricity Commission of Victoria, 475, Oxford Street, London, W.1.

Notes and News

Vacancy for Electrification Engineer.—The Railway Executive invites applications for the position of electrification engineer, electrical engineering new works and development organisation. See Official Notices on page 391.

Senior Draughtsman Required.—Applications are invited for the post of senior draughtsman, with experience in the design of diesel-electric locomotives, required by Brush Bagnall Traction Limited, Loughborough, Leicestershire. See Official Notices on page 391.

Institution of Locomotive Engineers.—At the general meeting of the Institution of Locomotive Engineers to be held on October 17, at 5.30 p.m., at the Institution of Mechanical Engineers, Storey's Gate, London, S.W.1, Mr. J. S. Tritton will deliver the Presidential Address on "The Inspecting Engineer's Contribution to Railway Economy."

Institution of Mechanical Engineers.—The Annual Dinner of the Institution of Mechanical Engineers will be held at 7 for 7.30 p.m. on October 18, at the Dorchester Hotel, Park Lane, London, W.1. The Presidential Address will be delivered by Mr. A. C. Hartley at a general meeting to be held at 5.30 p.m. on October 19, at Storey's Gate, London, S.W.1.

Closing of Sutton-in-Ashfield Branch Line. The London Midland Region of British Railways reports that the passenger train service on the Sutton-in-Ashfield to Sutton Junction branch line was permanently withdrawn on October 1. Sutton-in-Ashfield (General) Station is now permanently closed for passengers, parcels, and passenger train merchandise, this traffic being dealt with at Sutton Junction and Sutton-in-Ashfield (Central) Stations.

Excursion Arrangements for International at Belfast.—In connection with the Ireland *v.* Scotland football match at Belfast on October 6, a special train will leave Glasgow St. Enoch at 12.30 a.m. and Paisley Gilmour Street at 1.10 a.m. for Stranraer Harbour to connect with a special sailing to Larne for Belfast. The return service will leave Belfast at 12.20 a.m. on Sunday morning. A special weekend excursion *via* Stranraer and Larne leaves Glasgow St. Enoch today (Friday) at 7.25 p.m. and will return from Belfast at 1.45 p.m. on Sunday.

Road Haulage Association.—The annual conference of the Road Haulage Association will be held at Torquay between October 16 and 19.

Institute of Transport.—Mr. A. B. B. Valentine, Member, London Transport Executive, will deliver his Presidential Address to the Institute of Transport at the meeting to be held on Monday, October 15, at 5.45 for 6.15 p.m., at the Jarvis Hall (R.I.B.A.), 66, Portland Place, London, W.1.

Turkish Railways Bill.—An agency message from Ankara states that the Turkish Government has prepared the draft of a Bill which provides for the liquidation of the present Board of the State Railways and proposes to create a State-owned company to operate the railways with a capital of £(T)2,500,000,000. The company will be authorised to issue bonds for a sum not exceeding twice its capital. The issue of loans must be approved each time by the Government.

Mr. John Elliot Visits Banbury.—Mr. John Elliot, Chairman of the Railway Executive, accompanied by Mr. K. W. C. Grand, Chief Regional Officer, Western Region, and other Executive and Regional officers, visited Banbury on September 18. After meeting representatives of the staff Mr. Elliot inspected the passenger station and the plans for its reconstruction. This was followed by visits to the motive power depot, the marshalling yard, the staff hostel which was completed in 1948, and the housing estate on which 50 houses have been erected for railway workers and their families under a scheme sponsored by the former Great Western Railway. The photograph below shows, left to right, Mr. E. C. Coules, Chairman of the Management Committee of the Great Western (Banbury) Housing Association, Mr. John Elliot, Mr. W. G. Fortnum, Local Agent of the Association, and Mr. K. W. C. Grand, at the doorway of one of the houses on the estate.

Eastern Region Art Exhibition.—An art exhibition representative of work submitted by all grades of staff in the Eastern Region is to be held in Room 40 of the general offices at Liverpool Street Station. The Exhibition will be open to the public between October 10-13 from noon to 7 p.m.

Hunslet Tank Engines for India.—The Hunslet Engine Co. Ltd. has recently delivered two narrow-gauge 2-8-4 T engines to the Dholpur State Railway, India, for freight and mixed-train traffic. The cylinders are 12 in. × 18 in., the wheels 33 in., working pressure 175 lb. per sq. in., weight 37½ tons, and heating surface 630 sq. ft.

British Railways Coal and Steel Carryings.—During the weekend to October 1, British Railways cleared 369,680 tons of coal from deep-mined pits and opencast sites, making a total of 3,226,030 tons for the week; the latter figure is the highest weekly total since June. The latest figures for iron and steel show that 197,516 tons were conveyed during the week ended September 22 from the principal steelworks.

Institute of Transport Visual Aids Study Group.—The first meeting of the recently-formed Visual Aids Study Group of the Institute of Transport (Chairman, Mr. T. W. Royle, Past President) will be held on October 22 at 6 p.m. The programme will include four films: "A cautionary tale," lent by the British Transport Commission; "Shining Mountains," a Cana-

Mr. John Elliot, Chairman of the Railway Executive, with Mr. K. W. C. Grand, Chief Regional Officer, Western Region, and other officials on a visit to the staff housing estate at Banbury

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dian Pacific Railway travel film; and "Air Ambulance" and "Night Hop," both made by British European Airways. If time permits, there will also be an inspection and discussion of instructional film-strips and other visual aids material. Meetings of the Group for the 1951-52 Session have also been arranged, January 21 and March 31, 1952. Members and their friends are invited to any of the meetings, which will be held at the Institute of Transport, 80, Portland Place, London, W.1.

Road Accidents in July.—July was the worst month for road casualties since the war. These totalled 21,811, as compared with 21,044 in July last year, and with 22,684 in July, 1939. Deaths numbered 440, seriously injured 5,202, and slightly injured 16,169. More than 70 per cent. of the increase of 767 in total casualties above July, 1950, arose from accidents on Sundays. A feature of the July figures is an increase in the number of child pedestrians killed.

Fresh Fruit by Train from Spain.—The first full trainload of fresh fruit direct from Spain arrived at the Southern Region depot at Gravel Lane, Southwark, on October 2. This fruit, consisting of Almerian grapes, was conveyed in nine special wagons fitted with interchangeable axles which enables them to operate on the Spanish railways whose gauge is 5 ft. 6 in. and the French and British gauge of 4 ft. 8½ in. This service, as reported in our issue of June 29, was opened on June 26, when two wagons of apricots arrived at Southwark.

Meeting of Railway Managers in Luxembourg.—Mr. John Elliot, Chairman of the Railway Executive, last week attended an informal meeting in Luxembourg of General Managers and Directors General of railways in the Benelux countries, France, and Great Britain, held at the invitation of Monsieur J. P. Musquar, Director General of the Luxembourg Railways. The subjects discussed included the development of traffic by train ferry and other means, the problem of road and rail traffic, and the exchange of young railway officials for instructional purposes.

Visit of U.S.A. Industrialists to B.T.H. Works.—A delegation of American industrialists, headed by Mr. E. C. Givens and Mr. C. V. Schelke, Vice-Presidents of the International General Electric Company, is visiting this country to see at first hand something of the methods of production in the British engineering industry, and particularly in the field of heavy electrical plant. On October 1, the delegation spent a day at the works of the British Thomson-Houston Co. Ltd. at Rugby, with Mr. E. H. Ball, Managing Director, Mr. W. W. Vinsen, Director of Manufacture, Mr. H. L. Satchell, Director-Manager, Rugby Works, and other senior executives of the firm.

Opening of New Paint Factory.—Members of the Hull Development Committee and of the Hull City Council recently visited the paint and varnish works of Sissons Brothers & Co. Ltd. The visitors were welcomed by Mr. H. C. Bushby, Chairman of the company, who was supported by Mr. R. C. Sissons, Managing Director, and Mr. A. Marson, Sales Director.

Railway Students' Association.—Mr. C. K. Bird, Chief Regional Officer, Eastern Region, British Railways, will deliver his Presidential Address to the Railway Students' Association at the London School of Economics, Houghton Street, Aldwych, London, W.C.2, on Wednesday, October 17, at 6.30 p.m. The chair will be taken by the retiring President, Mr. John Elliot, Chairman of the Railway Executive.

Future of Road Haulage.—There was a reference in an editorial note in our September 14 issue to a decision by the Road Haulage Association to hold a meeting of its National Council on September 26 to consider the steps to be taken in view of the intention of the Conservative Party to afford an opportunity for hauliers to return to the road haulage business. At this meeting the council reached agreement on a plan that would make possible the return of road haulage to private hands "as quickly as possible and with the least possible dislocation of industry," and nearly all hauliers who have lost their business through nationalisation have supported the restoration of the industry to private enterprise and expressed willingness to re-enter road haulage.

Air Transport Fares.—On October 16 the British European Airways Corporation will increase many of its fares. The return London-Paris fare will go up to £15 6s. from £14 8s. and the off-peak excursion rate will be £12 instead of £11. Other increases are: Rome return, £58 10s. (£57 12s.); Barcelona, £43 8s. (£40); Berlin, £42 6s. (£39 7s.); Geneva, £29 9s. (£28 9s.); Milan, £49 3s. (£47 16s.). Excursion fares on certain routes in addition to Paris will also be advanced. A B.E.A.C. official has stated that the fares are being raised because of higher operating costs, and that increases are in common with foreign air lines operating over parallel routes and have been mutually fixed by the International Air Transport Association. This announcement coincides with one by Aer Lingus that as from October 21 it will introduce 17-day excursion fares which will be the cheapest since the war on all its services. This decision by the Irish Air Lines is the subject of an editorial note in this issue.

Holyhead Station Hotel Closed.—The Station Hotel, Holyhead, was closed on October 1, but the station refreshment rooms remain open as usual.

Special Trains for Glasgow Harvesters.—Six Scottish Region special trains took about 3,000 schoolchildren from Glasgow Buchanan Street on October 1 to harvest the potato crops in Perthshire, Angus, The Mearns, and Ross-shire.

Rail Improvements at Coke Ovens.—Extensive rail improvements have been planned by the Western Region of British Railways in connection with the reopening of the pits and coke ovens at Nantgarw, Glamorgan. The scheme provides for the laying of a rail connection between the former Taff Vale & Cardiff Railway sections near Taffs Well and the relaying and doubling of approximately a mile of existing track of the Cardiff Railway to handle the additional traffic which will arise. Removal of 2¼ miles of the Cardiff Railway, which will become obsolete, together with the steel superstructure from four underbridges, is also provided for in the plans. It is expected that the production of coke from the Nantgarw coke ovens will be at the rate of 260,000 tons a year, rising to 360,000 tons a year by 1954.

Estimated Increases in Air Transport.—An estimate that world air travel would increase by 100 per cent. in the next five years, and in certain parts such as Africa by as much as 200 per cent., was made recently by Air Commodore Sir Frank Whittle. Sir Frank Whittle, speaking at the Commonwealth Air Conference in London, said that most of that probable increase would come from an increasing realisation by the travelling public of the benefits they could get from air travel. Larger aeroplanes should be designed for shorter routes.

Buenos Aires Transport Corporation.—A Reuter message from Buenos Aires states that the Argentine Chamber of Deputies has, by 79 votes to 5, approved a Government bid of 410,000,000 pesos for the physical assets of the bankrupt Buenos Aires Transport Corporation. The effect of the offer on British and other shareholders in the concern was not immediately

known. Since Congress ordered the Corporation into liquidation in October, 1948, the British Government has made repeated approaches to the Argentine authorities on behalf of British shareholders in the Anglo-Argentine Tramways. Last April the Argentine Government was the only bidder when tenders were called for the purchase of the bankrupt corporation's assets. Observers have said that its offer was below the present day replacement value of the corporation's assets—underground railways, trams, and buses. Current liabilities of the corporation were estimated at over 1,500,000 pesos, mainly representing Government loans to cover operating deficits in recent years and purchases of new equipment.

Canadian Pacific Earnings.—Net earnings of the Canadian Pacific Railway in August were lower at $257,909, compared with $1,145,000 in July. Gross earnings in August totalled $36,261,339 against $35,795,000 the previous month; working expenses amounted to $36,003,430 against $34,650,000 in July.

Postponement of Sligo, Leitrim & Northern Counties Railway Strike.—A threatened strike by rail and road employees on the section of the Sligo, Leitrim & Northern Counties Railway operating in the Republic of Ireland, due to take effect on September 29, has been postponed for one week by the unions concerned. On receipt of the strike notice which followed the company's rejection of the men's claim for increased wages, the General Manager of the company got in touch with the Governments of the Republic and Northern Ireland to obtain assistance which would be necessary to meet the company's growing deficit. As a result the Northern Minister of Commerce agreed to meet the company's officials, and representatives of the Minister for Industry & Commerce in the Republic were to meet the company this week.

Forthcoming Meetings

October 5 (*Fri.*).—Scottish Society of Students of the Locomotive, at 302, Buchanan Street, Glasgow, C.2 at 7.30 p.m. Annual General Meeting.

October 6 (*Sat.*).—Historical Model Railway Society, at the Headquarters of the Stephenson Locomotive Society, 32, Russell Road, London, W.14, at 3 p.m. "The Courtice-Relph-Harrison Control of Model Steam Locomotives," by Mr. V. B. Harrison.

October 6 (*Sat.*).—Stephenson Locomotive Society, special train tour of north London and southern junction lines, leaving Kensington (Olympia) at 2.30 p.m.

October 9 (*Tue.*).—Permanent Way Institution, Leeds Section, at the Leeds Church Institute, Albion Place, Leeds, 1, at 7 p.m. Paper illustrated by slides: "Can We Mechanise Maintenance?" by Mr. W. H. Best, District Engineer, Lancaster, London Midland Region.

October 10 (*Wed.*).—Newcomen Society, at the Science Museum, Exhibition Road, London, S.W.7, at 5.30 p.m. "Chapman's Locomotives, 1812-15," by Mr. E. A. Forward.

October 11 (*Thur.*).—Institution of Electrical Enginers, Savoy Place, London, W.C.2, at 5.30 p.m. Inaugural address as President by Sir John Hacking.

October 13 (*Sat.*).—Permanent Way Institution, Manchester & Liverpool Section, at Manchester. Quiz programme.

Railway Stock Market

Much quieter conditions have ruled in stock markets where sentiment was affected by the Persian oil developments and by the tendency to await the outcome of the General Election. The Labour proposal of measures to "prevent large capital gains" led to little selling. The Conservative plan of a special E.P.T. for the period of rearmament came as a surprise although it was pointed out that the incidence of this tax would be equitable. It would bear mainly on companies benefiting exceptionally from rearmament work and it is also proposed to combine E.P.T. with special tax allowances in respect of profits set aside for new plant and equipment.

British Funds have turned easier because of the disclosure of the big fall in the gold and dollar reserves of the sterling area. This decrease has arisen from various factors, including rising costs, which have increased the prices of exports, whereas in the previous quarter the sterling area benefited from exceptional demand for wool, copper, and tin for stockpiling in the U.S.A. Dollar income derived from the sale of Persian oil naturally has fallen sharply, and there will be a big drain on dollars if there is no settlement.

Overseas securities have tended to attract increased attention, and foreign rails were rather more active as a result. A feature was strong buying of Taltal shares, which advanced to 21s. 3d. accompanied by vague and unconfirmed talk of take-over possibilities. Nitrate Rails were firm at 25s. 3d. and Antofagasta stocks were again active with the ordinary at 18¾ and the preference at 76.

On the other hand, latest traffic figures were regarded as disappointing and put Canadian Pacifics easier at 65½. Mexican issues have been prominent with Mexican Central "A" at 77 and National of Mexico 4½ per cent. non-assented at 45½. White Pass Yukon 5 per cent. debentures have been active around 216 and the income debentures changed hands around 95. Algoma Central $100 5 per cent. debentures were $257.

Continued absence of news of nationalisation developments kept United of Havana stocks quieter, although at the time of writing prices have been fairly well maintained, with the 5 per cent. 1906 debentures at 20¾ and Cuban Central debentures 46. In other directions Bolivar "C" debentures were 18 and La Guaira ordinary stock firm at 92½. Manila "A" debentures were 82 and the preference shares 9s.

Leopoldina stocks have been very quiet, but steady, existing holders generally being prepared to await the eventual pay-out for the various stocks, which can be expected when Brazil permits release of the compensation money. Leopoldina stocks are still quoted at levels somewhat below their expected pay-out levels. The ordinary has been dealt in around 10⅞, the preference were 26, the 4 per cent. debentures easier at 91½, and the 6½ per cent. debentures 137. Leopoldina Terminal 5 per cent. debentures receeded to 93 and the ordinary units were 1s. 7½d. San Paulo 10s. units, after their recent rise, eased to 15s. 4½d. Brazil Rail bonds were quoted at 132s. 6d.

Road transport shares were firm, sentiment being helped by the prospect that road haulage will be returned to private enterprise if there is a change of Government. Lancashire Transport were 58s., West Riding 47s., Southdown 92s. 6d., and B.E.T deferred stock firmer at £485.

There was a steadier tendency in engineering shares. Sentiment was again helped by the hope that nationalisation will be ended and the steelworks returned to their former owners. It is realised that it will be a difficult matter to "unscramble" 3½ per cent. Steel stock, particularly as many holders of steel shares who were forced to exchange into this stock have now sold the latter. On the other hand, the names of shareholders who held on to their shares until forced to take up Steel stock last February have been retained in company records. Guest Keen, Vickers, B.S.A., and Cammell Laird have been inclined to strengthen in price.

Shares of locomotive builders and engineers displayed firmness with Hurst Nelson at 61s. and Birmingham Carriage 38s. 7½d. Vulcan Foundry were 27s., North British Locomotive 19s., Beyer Peacock 33s., and Gloucester Wagon 16s. 4½d. Wagon Repairs 5s. shares were 14s. 6d. Charles Roberts 5s. shares have been active around 27s. 3d. in the hope of a tax settlement favourable to the company.

Traffic Table of Overseas and Foreign Railways

	Railway	Miles open	Week ended	Traffics for week: Total this year	Traffics for week: Inc. or dec. compared with 1949/50	No. of week	Aggregate traffics to date: Total 1950/51	Aggregate traffics to date: Increase or decrease
South & Cen. America	Antofágasta ...	811	21.9.51	£ 102,980	+ £ 36,840	38	£ 4,471,700	+ £ 2,039,736
	Costa Rica ...	281	Aug., 1951	c1,295,820	+ c150,407	9	c2,568,670	+ c149,366
	Dorada	70	Aug., 1951	36,976	— 5,426	35	288,447	— 24,505
	Inter. Ctl. Amer....	794	July, 1951	$1,039,745	— $53,042	30	$7,971,396	— $152,622
	Paraguay Cent. ...	274	21.9.51	₲307,259	+ ₲124,935	12	₲3,985,541	+ ₲1,789,303
	Peru Corp. ...	1,050	Aug., 1951	$8,659,000	+ $529,000	9	$16,584,000	+ $979,000
	" (Bolivian Section)	66	Aug., 1951	Bs. 13,962,000	+ Bs. 6,308,000	9	Bs. 26,991,000	+ Bs. 11,506,000
	Salvador	100	July, 1951	c125,000	+ c20,000	4	c125,000	+ c20,000
	Taltal	147	Aug., 1951	$2,065,000	+ $528,500	9	$3,885,000	+ $1,086,600
Canada	Canadian National†	23,473	July, 1951	17,681,000	+ 895,000	30	117,434,000	+ 15,331,000
	Canadian Pacific† ...	17,037	July, 1951	11,932,000	+ 873,000	30	80,924,000	+ 10,763,000
Various	Barsi Light* ...	167	Aug., 1951	22,500	— 1,785	21	191,250	+ 31,920
	Egyptian Delta ...	607	10.4.51	17,513	— 267	4	17,513	— 267
	Gold Coast ...	536	July, 1951	254,368	+ 17,091	17	1,058,909	+ 99,114
	Mid. of W. Australia	277	July, 1951	46,474	+ 2,594	4	46,474	+ 2,594
	South Africa ...	13,398	1.9.51	1,876,674	+ 124,079	22	41,527,803	+ 5,537,350
	Victoria	4,744	Apr., 1951	1,793,401	+ 71,930	43	—	—

* Receipts are calculated at 1s. 6d. to the rupee † Calculated at $3 to £1